DEC 12 1957 B 685326
DEC 30 1957
ONE COPY SENT TO L. C.

hitchcock's

WOOD WORKING

digest

DECEMBER, 1957

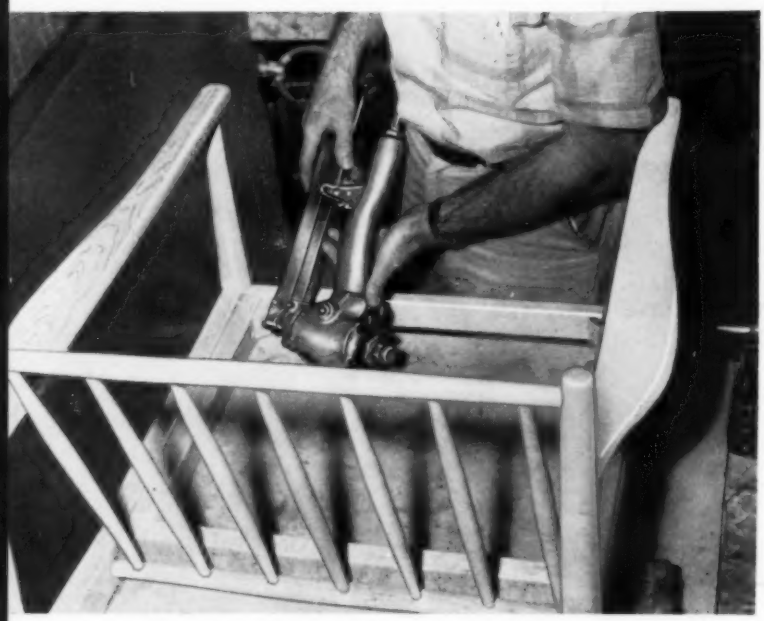
In This Issue

- Engineered Wood Windows
- U. S. Plywood Prefinishing Technique at Orangeburg
- Are We Promoting Wood?
- Plywood Manufacturer Gets In Road Building Program
- Airless Spraying at Prairie Schooner
- Women Love Wood!

THE NUMBER ONE PUBLICATION FOR THE ENTIRE WOODWORKING INDUSTRY

SPOTNAILERS

speed assembly of 2000 chairs, tables per month*



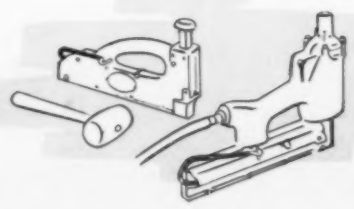
SHIELD CHAIR CO., Los Angeles, Calif., found manual nailing was inefficient. If one man had trouble getting nails into a corner block, the worker assigned to a following assembly operation would temporarily have nothing to do.

Therefore, according to plant superintendent, Wayne Gamble, the company lately has increased the productivity with a new unit (Spotnailer) which has an extension nose for the pneumatic insertion of pins in formerly inaccessible corner areas.

The tool not only drives a pin in about a third of the time required to drive a nail; it eliminates the need for supplemental boring and countersinking, and prevents mistakes of the type that bends nails and damages fingers. You can use the Spotnailer to pin chair rings quickly and without splitting hardwood. You have controlled countersink and trouble-free operation. This new Spotnailer is the first fully pneumatic nailing device.

From a story in Wood and Wood Products

To learn how a Spotnailer can speed your work and reduce costs, ask your Spotnail man or
WRITE FOR DESCRIPTIVE FOLDER



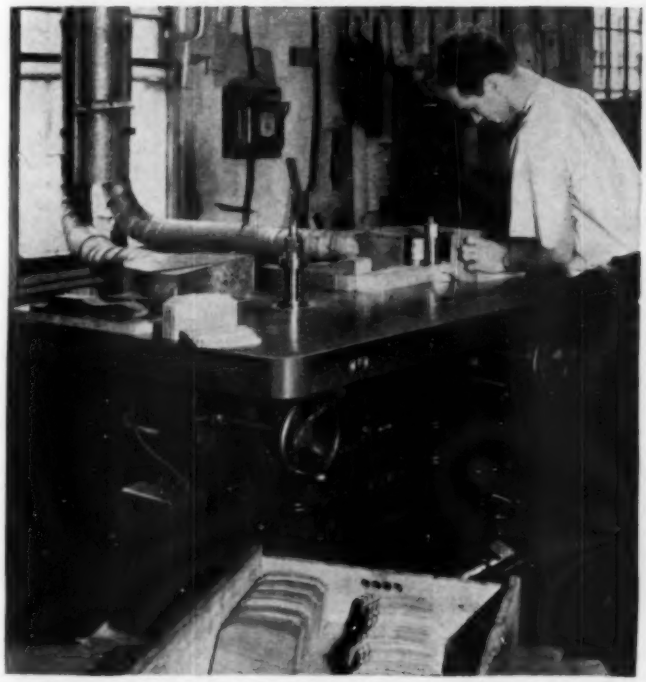
Air drive and mallet drive guns . . .
Fasteners ⅜" x 2" long.

SPOTNAILS, INC.

EVANSTON 1, ILLINOIS

B 685326
DEC 12 1957

OLIVER Shapers give you all-around fast, smooth work



For years we have operated your Double-Spindle Shaper continuously on both light and heavy cuts, using all kinds of stock from hard maple to basswood, cutting with or against the grain. The result is a very smooth grade of work with no tearing, and requiring very little sanding.—Widdicomb Furniture Co.

The Oliver Double-Spindle Shaper is unmatched for smooth work on light and heavy cuts

This Oliver heavy-duty production Shaper will speed all types of work through your machine room. Its high-speed, smooth-running spindles cut keen edges and reduce sanding costs to a minimum. On hard or soft woods, cutting against the grain, off the grain, with or into the grain, the work is extra smooth. Heavy spindles, bearings and housings prevent springing on heaviest cuts. Spindles are specially ground and balanced to eliminate vibration. They run true at highest speeds. The entire spindle unit can be lifted from the yoke without removing yoke from machine. Built with heads up to 24" long for special jobs. The spindles are lubricated by an oil mist excluding dust from the races. The Oliver No. 288 Shaper is offered with three types of drive: Motor-on-arbor, close-coupled belted-motor, and V-belt drive. Built with smoothly ground table: 66"x36"—24" center to center, or 72"x42" with 30" center to center. Write today for Bulletin No. 288.

Single Spindle Shaper for high production

This heavy-duty Shaper rabbets, grooves, routes, shapes with speed and accuracy. For special jobs it has heads up to 24" long. Three types of drive: Motor-on-arbor, close-coupled motor-drive, and V-belt drive . . . spindle speeds to meet your needs exactly. Write for Bulletin No. 287.

Sturdy Variety Shaper handles a wide range of production work

This sturdy production Shaper handles many types of work smoothly. Built to stand up under continuous production. Has flexible belt or motor-on-spindle drive. Write for Bulletin No. 285.

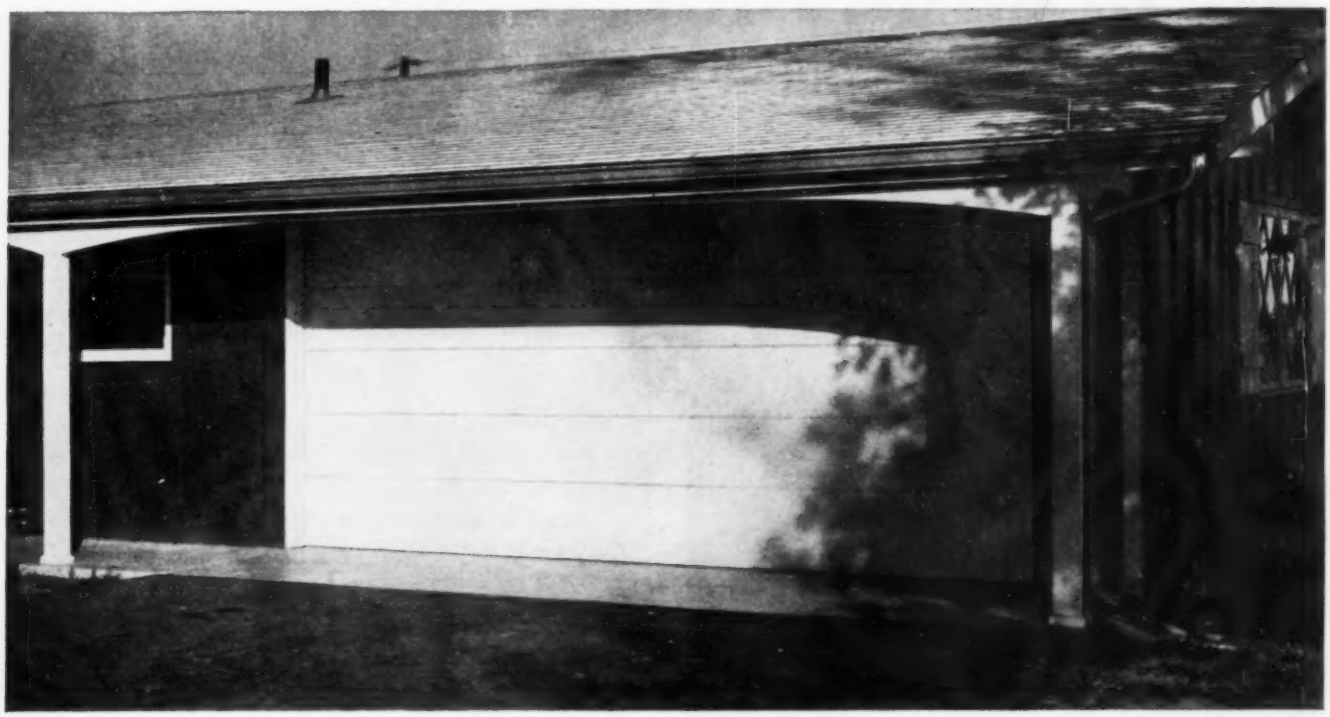
Whatever your Shaper problems, consult with our engineers for a paying solution

OLIVER
SINCE 1890

OLIVER MACHINERY COMPANY
Grand Rapids 2, Michigan

NEW! INSTANT-LOK

AN INSTANT BONDING CONTACT CEMENT FROM THE MAKERS OF WOOD-LOK®



amazing production speeds at

INSTANT-LOK is a spectacular new contact cement from National. How spectacular? Look at the production record of the Overhead Door Corporation. A crew of only six men make honeycomb door sections. As described at right. Two prepare frames. Two glue. Two press. Their production with INSTANT-LOK? An amazing record of 200 sections a day. Or a finished section every 2½ minutes.

INSTANT-LOK avoids all delays. You simply spread matching coats on the surfaces to be joined. Use either spray or roller. Allow a few minutes for drying. Then press the surfaces together. An instant bond results. Strong. Creep resistant. Water resistant. Interested? A National Specialist will be glad to tell you more about INSTANT-LOK. Just write or telephone your nearest National office.

FOR DINETTE TOPS · CURTAIN WALLS · VANITORIES · SINK & SPLASH BOARD INSTALLATIONS PARTITIONS · PANELS · DESK TOPS · DOORS · AND OTHER PANEL TYPE CONSTRUCTIONS

STRUCTURAL PRODUCTS DIVISION

National

STARCH PRODUCTS INC.

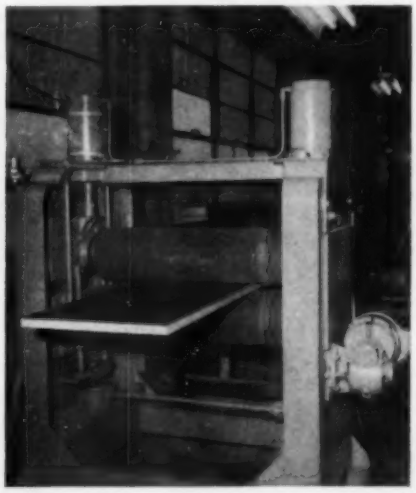
MAKERS OF WOOD-LOK AND GRANITE BOARD

NATIONAL STARCH PRODUCTS INC., Structural Products Division, 270 Madison Avenue, New York 16 • 3641 So. Washtenaw Avenue, Chicago 32 • 735 Battery Street, San Francisco 11 • 1511-23 So. Main Street, High Point, N. C.

1. INSTANT-LOK is sprayed on a core frame and its facing sheet of hardboard. Outline of frame is duplicated by eye on hardboard. Fluid pressure is only four p.s.i. Average drying time for INSTANT-LOK: two or three minutes.

2. Next, the two sections with their matching coats of INSTANT-LOK are brought together and run through a simple Black Brothers Resilient Roll Press. An instant bond results without prolonged pressing and curing times.

3. A thin even film of WOOD-LOK, National's famous cold run resin glue is now roller-coated on interior hardboard surfaces. Operation is clean and simple because WOOD-LOK is ready to use. No heating. No mixing.



AT LEFT — Another first for the Overhead Door Corporation, originators of overhead garage doors. This time: a modern, completely flush door made of honeycomb core flush sections. Production is streamlined and uninterrupted with the instant bonding speed of National's new contact cement, INSTANT-LOK — with an able assembly assist by National's famous fast setting WOOD-LOK.

the Overhead Door Corporation

4. Honeycombs of phenolic saturated paper are inserted in the core frame to add strength to the construction. These are bonded in place by the coating of WOOD-LOK, which sets in plenty of time to permit continuous assembly.

5. Matching coats of INSTANT-LOK are sprayed on a second sheet of hardboard and on top of the core frame. WOOD-LOK then is roller coated on areas that face honeycombs. The two sections are combined and roller-pressed.

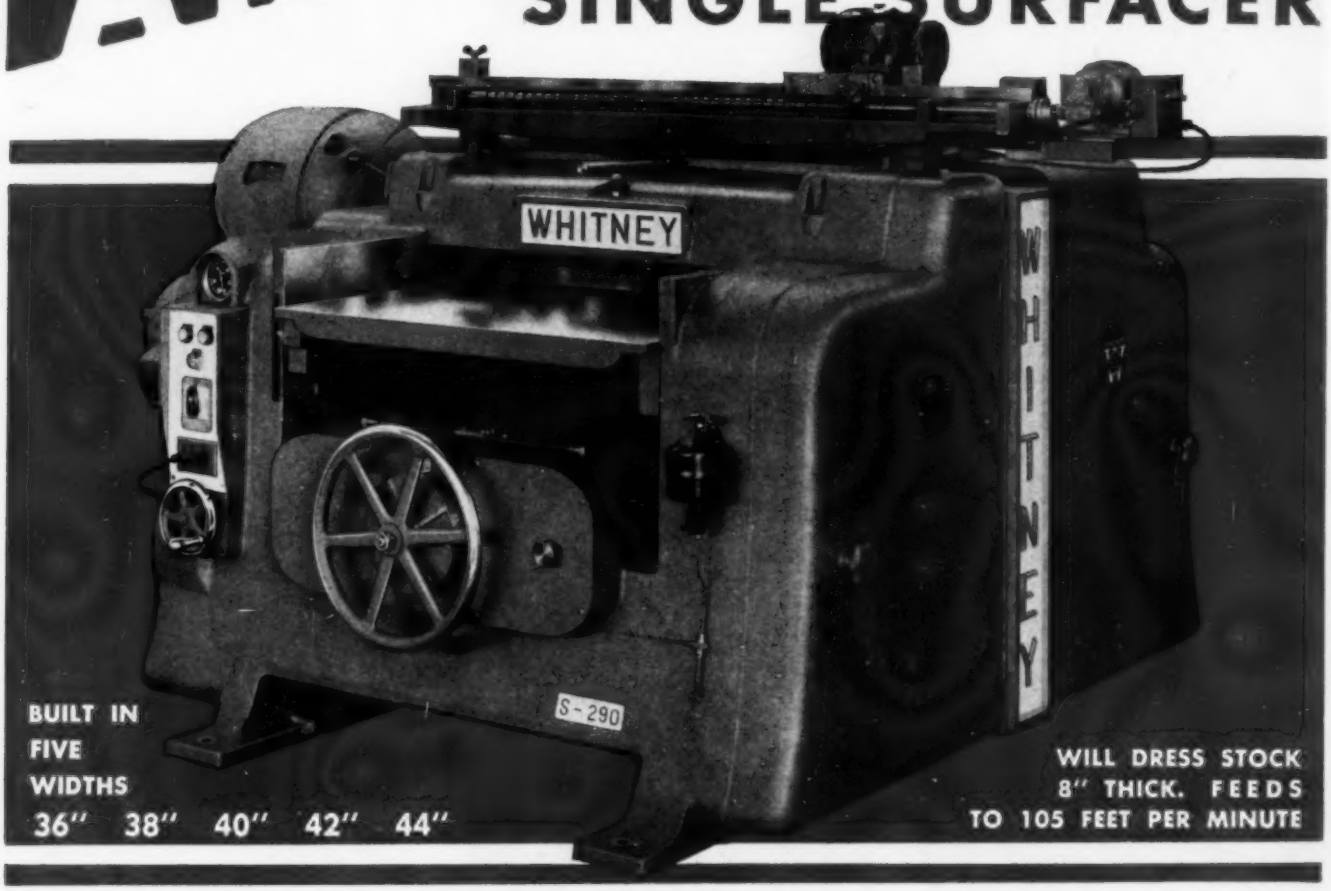
6. The pressed sections are finished with automatic trimming and molding. Note that INSTANT-LOK requires only the roller press and spray set-up. No expensive special equipment is needed to produce sections from 8 ft. to 18 ft. long.

Announcing

The S-290

A NEW WHITNEY

QUALITY PRODUCTION SINGLE SURFACER



BUILT IN FIVE WIDTHS
36" 38" 40" 42" 44"

WILL DRESS STOCK 8" THICK. FEEDS TO 105 FEET PER MINUTE

This fine new Whitney Planer embodies the most modern features in Single Surfacers. It is built in five widths, 36", 38", 40", 42" and 44" and has 4-knife round cutterhead—will dress stock 8" thick and as short as 14" when not butted or 3" butted.—Available on this new machine are: Variable feed unit giving feeds to 105 feet per minute.—Flexible or sectional chipbreaker.— Centralized adjustments for lower feed rolls, top feed rolls and pressure bar.—Cutterhead brake.—Graduated dial handwheel for .001 inch bed setting.—One-shot lubrication.—Automatic knife grinder.—Over 100 years of experience, experiment, research, and plain down-to-earth "know-how" have gone into the Whitney products. Every feature which has been dictated by good usage in a production planer has been engineered and built into these modern Whitney Planers.

Write today for specifications, prices, and full information on any Whitney machine.

Baxter D. Whitney & Son, Inc.

WHITNEY
QUALITY PROGRESSIVENESS EXPERIENCE
EST. 1837

PLANERS • AUTOMATIC SHAPERS • HAND SHAPERS • JACKS
VARIETY SAWS • MORTISERS • BACK KNIFE LATHES

WINCHENDON MASSACHUSETTS U.S.A. GREENSBORO NORTH CAROLINA

E. McDANIEL
Editor

DARRELL WARD
Field Editor

PAUL H. GRAHAM
Contributing Editor

R. MILLER
Editorial Assistant

J. L. ENGLUND
Readers' Service

JOHN S. TODD
Production Manager

D. L. CAMPBELL
Advertising Production Manager

L. M. SCHROEDER
Art Director

R. L. SPRECKELS
Circulation Manager

December '57

There are many factors which contribute to a good wood product. The Andersen Corporation has developed an excellent over-all program for the manufacture of engineered wood windows. The first installment of our tour through this plant appears on page 27.

hitchcock's WOOD WORKING digest

Vol. 59 **No. 12**

Editor's Page 12
About the Cover 14
Memo to Management 16
Letters to the Editor 20
Engineered Wood Windows 27
Women . . . Wood . . . Wunderbar 31
Steel Strapping Cuts Costs 35
Can We Promote Woodwork? 37
Automation in the Sawmill 42

FINISHING SECTION 65
How U.S. Plywood Prefinishes Panels 67
Prairie Schooners for Today 77

PLYWOOD SECTION 83
You Can Take It With You 85
What Is An Ideal Glue 88

Around the Shop 47
Right or Wrong 52
Available Literature 60
Men in the Industry 100
Equipment and Supplies 105
Indexes ..... See Inside Back Cover

Business Staff

R. C. VAN KAMPEN
President

V. C. HOGREN
Executive vice-president

W. F. SCHLEICHER
Vice-president and
Editorial Director

HENRY J. SMITH
DAN E. REARDON
Vice-presidents

OLIVER S. PEPPER
Business Manager

BRUCE B. HOWAT
Production Director

LOREN D. JOUETT
Director of Marketing

For District Managers
See Inside Back Cover.

SUBSCRIPTION RATES:

DOMESTIC
1 Year (12 issues) $4.00
2 Years (24 issues) 7.00

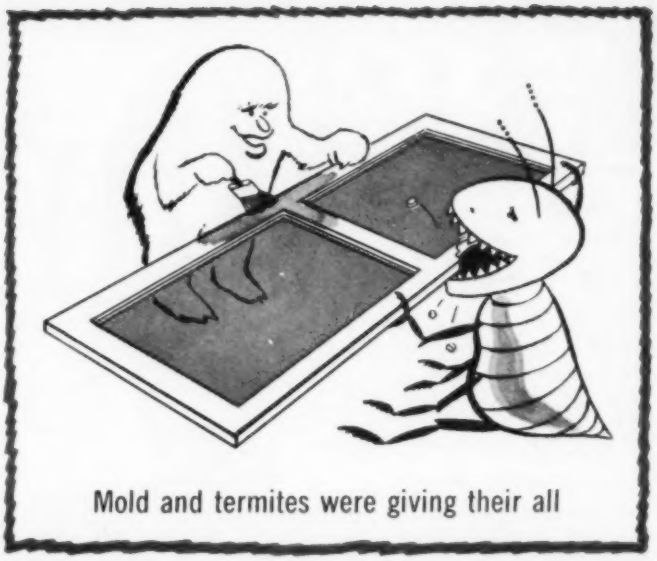
CANADIAN & FOREIGN
1 Year (12 issues) $5.00
2 Years (24 issues) 10.00

Copyright 1957, by Hitchcock Publishing Co., 222 E. Willow Ave., Wheaton, Ill. Phone WHeaton 8-3400, Cable Address HITCHPUB.

Accepted as Controlled Circulation Publication at Pontiac, Illinois

MEMBER
BPA

Stain and mildew were having a ball



Mold and termites were giving their all

'Til the boss discovered they couldn't mar

Millwork protected with PENTA-WR

Get full protection with **Chapman Penta-WR**

WATER REPELLENT WOOD PRESERVATIVE

Your millwork will stay bright, clean and new-looking longer if you treat it with Chapman PENTA-WR. This improved preservative with a full 5% PENTAchlorophenol content prevents stain, mold and mildew damage and gives lifetime resistance to insect attack. The superior water-repellent chemicals used in Chapman PENTA-WR reduce swelling and shrinking to a minimum.

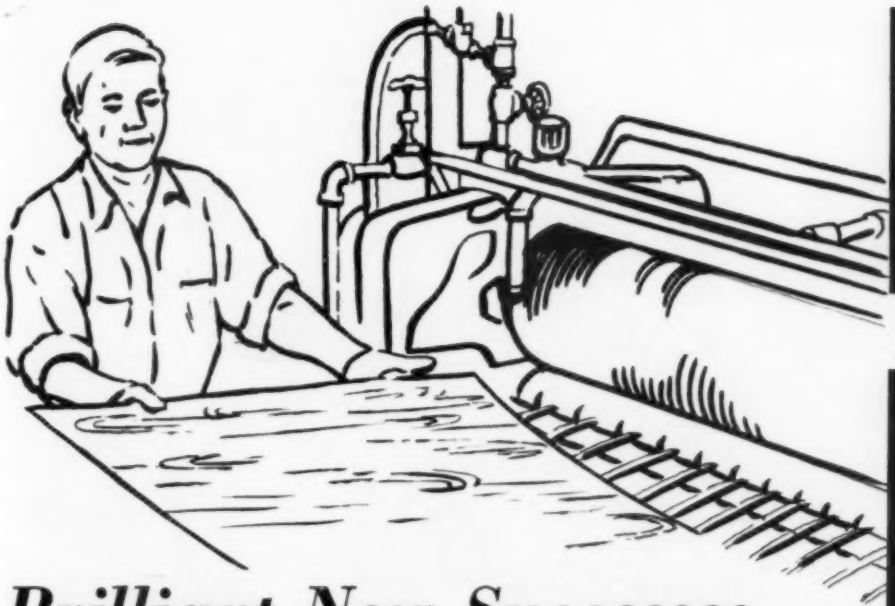
You save, too, when you use Chapman PENTA-WR, by specifying the type solution most economical for your operation (ready-to-use or concentrates of 1-to-3 or 1-to-5). There's a Chapman warehouse or plant near you (even in Canada and Mexico) so you usually pay lower transportation charges and get faster delivery. Write for complete technical data and prices.

CHAPMAN® **PENTA-WR**

MEETS FEDERAL SPECIFICATION TT-W-572 AND MILITARY SPECIFICATIONS

CHAPMAN CHEMICAL COMPANY
Leading manufacturer of wood preservatives
Memphis 1, Tennessee
Minneapolis, San Francisco, Portland, Ore., Charlotte, N. C.

WATER REPELLENT PRESERVATIVE
APPROVED
NATL. WOODWORK MFRS. ASSN.

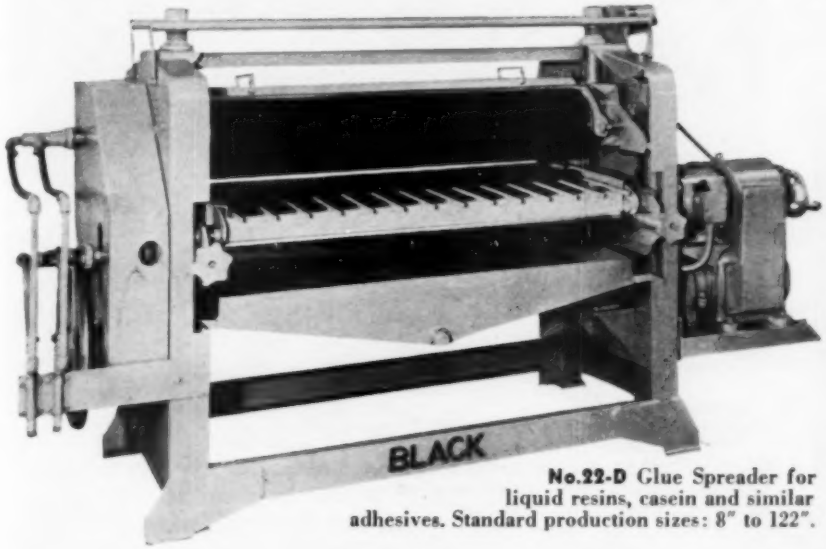


A West Coast manufacturer speeds production of hollow core flush doors with the No. 22-D, 50".

For glue testing and development work, a leading glue manufacturer depends on the No. 22-D Spreader.

Brilliant New Successes in Gluing and Laminating

Versatile No. 22-D Spreader helps produce laminated beams and roof trusses at a California mill.

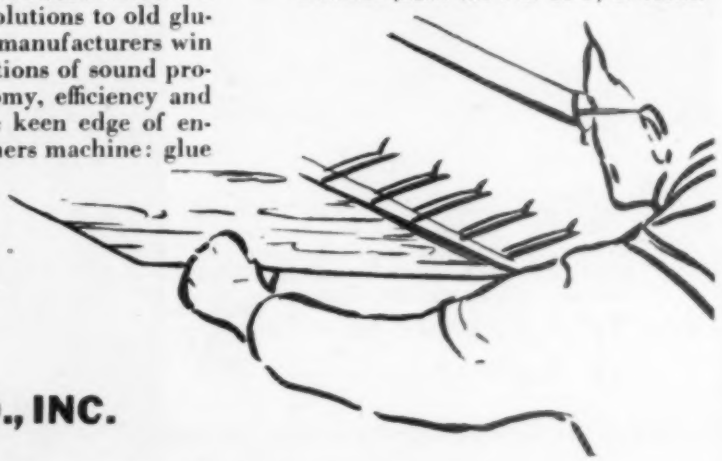


No. 22-D Glue Spreader for liquid resins, casein and similar adhesives. Standard production sizes: 8" to 122".

Fast, economical production of plywood in a Finnish plant. The No. 22-D, of course.

On production lines, in glue rooms and laboratories . . . Black Brothers Gluing and Laminating Equipment provides new solutions to old gluing and laminating problems. Helps cost-conscious manufacturers win new competitive markets, too, through new applications of sound production techniques. Preferred for its proven economy, efficiency and speed, the versatile No. 22-D Spreader reflects the keen edge of engineering skill incorporated into every Black Brothers machine: glue spreader, mixer, press or clamp.

Shouldn't you consider a Black Brothers installation? Write for our Supplement to Bulletin No. 11-A which gives construction details and specifications on the No. 22-D Glue Spreader.

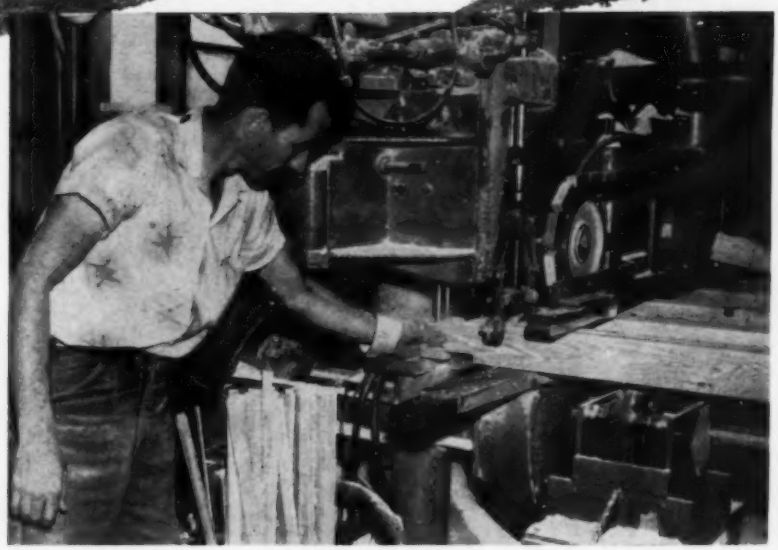


THE BLACK BROTHERS CO., INC.

MENDOTA 6, ILLINOIS

The Nation's Largest Producer of Quality Homes Uses *GREENLEE* Machines

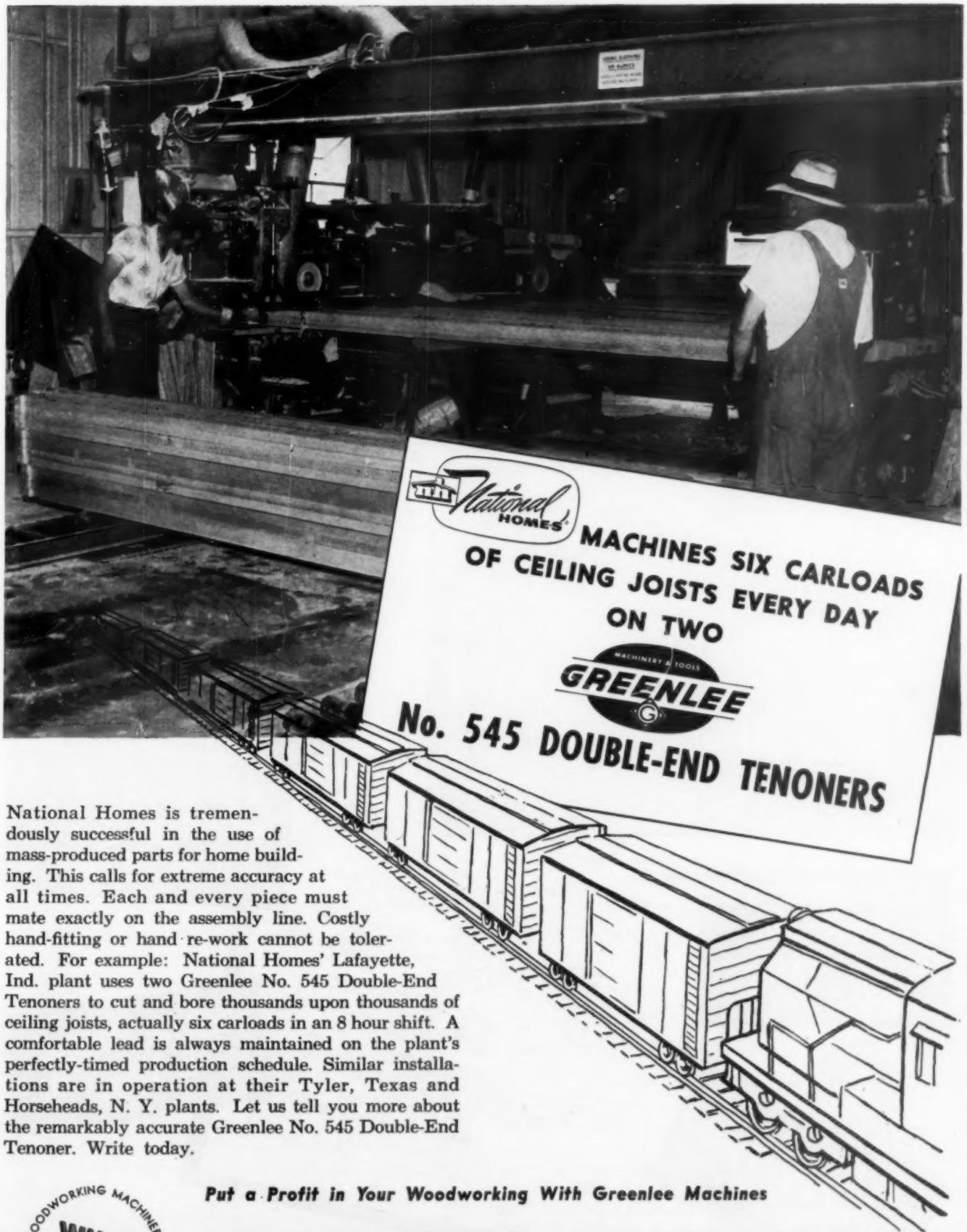
National HOMES



GREENLEE One of the Greenlee No. 545 Double-End Tenoners is equipped with a special boring attachment. Operates vertically or at an angle. Eliminates need for a separate borer . . . all operations completed in one pass.

GREENLEE Greenlee No. 545 Double-End Tenoners are easily set up and maintain extreme accuracy throughout the run. Periodic checks of the machined pieces against metal patterns prove this fact.

GREENLEE Assembly lines at National Homes never stop for want of finished stock. High-speed Greenlee No. 545 Double-End Tenoners are famed for their capacity to maintain high production on long runs.



National Homes is tremendously successful in the use of mass-produced parts for home building. This calls for extreme accuracy at all times. Each and every piece must mate exactly on the assembly line. Costly hand-fitting or hand re-work cannot be tolerated. For example: National Homes' Lafayette, Ind. plant uses two Greenlee No. 545 Double-End Tenoners to cut and bore thousands upon thousands of ceiling joists, actually six carloads in an 8 hour shift. A comfortable lead is always maintained on the plant's perfectly-timed production schedule. Similar installations are in operation at their Tyler, Texas and Horseheads, N. Y. plants. Let us tell you more about the remarkably accurate Greenlee No. 545 Double-End Tenoner. Write today.

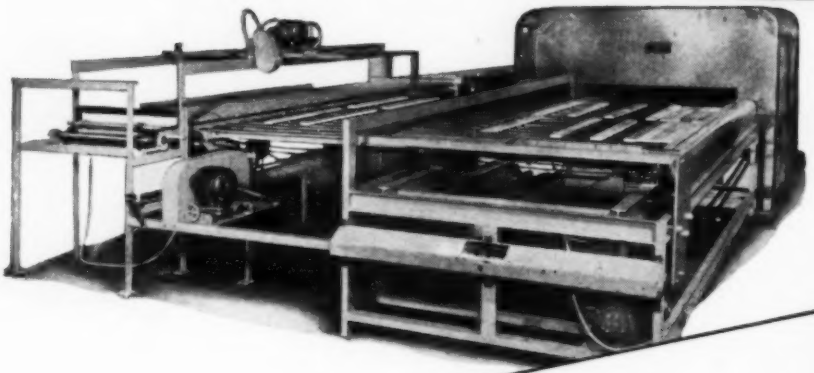
Put a Profit in Your Woodworking With Greenlee Machines

WOODWORKING MACHINERY MANUFACTURERS' ASSOCIATION WMMA

GREENLEE BROS. & CO.

1932 TWENTY-FIRST AVE.
ROCKFORD, ILL.

"Our First Attempt at
COMPLETE AUTOMATION
PAID OFF"



with a
BELL
300

"Substantial Direct Labor Saving."

"Previous to installation, we used 10 times the space."

"Superior Product No Open Joints."

"All our requirements handled on one shift."

"Higher lumber yield and considerable savings in raw material."

Hamilton
MANUFACTURING COMPANY · TWO RIVERS · WISCONSIN

August 21, 1957

Bell Machine Company
Oshkosh
Wisconsin

Attention: Mr. Robert B. Gilbertson
Sales Manager-Machinery Div.

Dear Mr. Gilbertson:

We appreciate your interest in inquiring how your machine is functioning in our plant.

After appraising the operation of the electronic gluer for the past year, we find ourselves entirely satisfied with its performance. We have accomplished the following improvements in our process:

1. The one-man operation through the automatic transfer mechanism has resulted in a substantial direct labor saving.

2. The entire installation is a space saver. Previous to its installation we used ten times the space for chain clamps.

3. The product now being produced is far superior to our previous method using chain clamps. We have few open joints, and failures are now in the lumber rather than in the joints. Our customer complaints for open joints have almost completely vanished.

4. With the installation of the electronic gluer we changed our processing to eliminate the matched joint, and by eliminating the bead we save 3/16" of good lumber for each joint, resulting in a considerable savings in raw material and as a consequence a higher lumber yield.

In summary, one of our first attempts at complete automation had paid off. The machine has sufficient capacity and power to handle all our requirements on one shift, and is turning out product that meets our high quality requirements.

Yours truly
HAMILTON MANUFACTURING COMPANY
O. V. Uhlir
Vice President - Manufacturing

OVU:BA

No other high frequency edge bonding machine can match the performance of the Bell 300. For complete details, write

Bell
THE BELL MACHINE COMPANY
WOODWORKING MACHINERY
71 Jackson Drive • Oshkosh, Wisconsin

Look to Hoe for on-the-job assistance *with your cutting problems*

© R. Hoe & Co., Inc. 1956

When you need technical assistance . . . "Buzz" Hoe

This is no "run-of-the-mill" offer. Instead, it's part of R. Hoe's standing policy to back up its product as well as the distributors who sell you Hoe saws and tools, carbide-tipped saws, Jones & Orth cutter heads, machine knives and other products.

Hoe's seven service centers are strategically located in the nation's greatest timber cutting and processing areas. They're located there to assure you of prompt delivery and to provide emergency and technical assistance when needed.

Each center is staffed by men who have had wide experience with cutting wood, composition and chip boards, plastics, and non-ferrous metals. If you have a special cutting problem, call in your Hoe factory representative today.

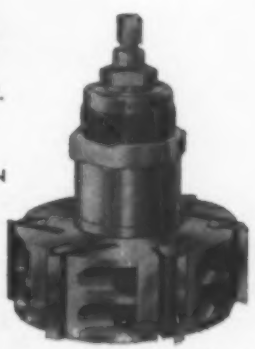
No other manufacturer can match Hoe's 129 years of saw and cutting tool experience.

R. HOE & CO., INC.
910 East 138th Street, New York 54, N. Y.

JONES & ORTH CUTTER HEAD DIVISION
Box 3523, Seattle 24, Washington

CARBIDE SAW & TOOL DIVISION
1809 English Street
High Point, North Carolina

Manufacturing and Warehouse Branches
Chicago • Birmingham • Memphis
Seattle • Portland, Ore. • High Point



Jones & Orth Cutter Head

Chisel Tooth Saws • Solid Tooth Circular Saws • Bits and Shanks • Files • Grinding Wheels • Metal and Wood Cutting Band Saws • Carbide-Tipped Saws and Tool • Cutter Heads • Special Form Knives • Machine Knives

hitchcock's
WOOD WORKING
digest

The Editor's Page

What is Peace?

Some 2000 years ago, on the hillsides of Judea, in the land known as Israel, God sent an angelic host to deliver a message of "peace on earth, good will to men." But in the very place where angels sang to the glory of God there has been war, hate, greed—anything but peace. In fact, today we may well ask where in all the world one can find peace!

Was God sending a message that could never come true? Was the angel host the shepherds saw a meaningless heavenly vision? If not, what did it mean?

The message concerned the birth of a child, "For unto you is born this day . . . a savior." This One was born in simple surroundings and lived a humble life, but throughout the hundreds of years since He came, His teachings have been followed by many. After 1900 years, the world continues to celebrate the birthday of Jesus Christ, the Lord. Millions today believe, as expressed in the words of some who were present at His crucifixion: "Truly, this was the Son of God" (Matthew 27:54, the Bible).

Those who believe that Jesus Christ is the Son of God, the Savior for mankind, know that the peace announced by the angels is not freedom from warfare. It is not a peace among men which eliminates the struggle and strife of daily existence. These things are man-made.

The peace announced by the angels is something quite different. It is a peace of heart, peace of mind, peace of soul found through faith in God and His Son. Many of us have sung the carol, "O Little Town of Bethlehem," each Christmas season. But may we all, this year, find that the peace and joy announced by the angels on the Judean hills is explained in its words:

"How silently, how silently, the wondrous Gift is given!
So God imparts to human hearts the blessings of His heaven.
No ear may hear His coming, but in this world of sin.
Where meek souls will receive Him still, the dear Christ enters in."

E. McDaniel
Editor

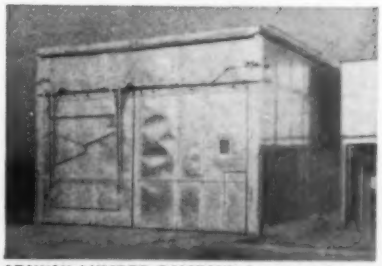
step up to

STANDARD

for uniformly-dried lumber at lowest possible cost

● For any type of new kiln installation, or for remodeling of old natural draft kilns, call on Standard—manufacturers and designers of today's finest internal-fan kilns—to solve *your* drying requirements *best*. Write for information, and a free copy of our complete Equipment Catalog and Prefab Kiln Brochure.

***REMEMBER*, quality control starts with your dry kiln. Make sure it's the finest—make sure it's Standard.**



SEAWAY LUMBER COMPANY has stepped up to **STANDARD**—Located at Bedford, Ohio, this prefabricated kiln installation is one of our newest. During the first few months of operation, it dried over 200,000 feet of thick lumber with no degrade.

S. R. HUNGERFORD has stepped up to **STANDARD**—Frank Hungerford, vice-president, writes: "We chose Standard as representing everything we desired in a dry kiln. We would recommend them most highly to anyone desiring the ultimate in precision low-cost drying."

DRAPER CORPORATION has stepped up to **STANDARD**—This well-known firm has over 20 Standard installations, and has called on us to remodel six additional kilns at its Hopedale plant. Shown above is the interior of one of the six Standard prefabricated kilns installed at Draper's Swannanoa, N. C. plant.

CONSIDER H. WILLETT has stepped up to **STANDARD**—Frank Brandon, vice-president of Willett, writes: "We've installed a large capacity Standard kiln of the package type. The texture of the lumber taken from it is perfect. It's soft, easily worked, and shows a minimum of shrinkage."

Manufacturers of Internal Fan Kilns

STANDARD DRY KILN COMPANY

STANDARD HAS THEM ALL
- Prefabricated Kilns
- Package Loaded Kilns
- Remodeled Kilns

Other Quality Standard Products

Lumber Stackers • Dry Kiln Doors • Power Transfer Cars • Lumber Lifts • Kiln Trucks • Moisture Registers

P. O. BOX 5708 • INDIANAPOLIS 21, INDIANA

BRANCH OFFICE: REDMAN ENGINEERING SERVICE • HIGH POINT, N.C.

About the Cover

What more appropriate Christmas reminder than the magnificent live oak tree on our December cover? This is the season of the year when we are accustomed to seeing a great variety of trees arrayed for the Christmas season—firs, pines, spruce—flocked, unflocked—decorated with tinsel and colored baubles. Not that we are unappreciative of these efforts—though spare us from any of the modernistic metallic trees. However, we felt this would be an appropriate time to recognize one of Nature's greatest gifts to man—trees—in a completely unadorned state.

This tree conveys the true, peaceful spirit of Christmas, and stands as a magnificant specimen of the forests which over the centuries have contributed so much to the comfort and well-being of man. Wood has been an integral part of our American heritage and way of life. Wood's influence today completely surrounds us. May we all do our part to continue this encouraging trend.

This towering beauty is growing in central Florida, on the farm of Mrs. Charles J. Williams, Jacksonville, Fla., and the late Mr. Williams. Mr. Williams was a pioneer in the seasoning of lumber and chairman of the board of the Moore Dry Kiln Company until his death in 1956.

In a recent campaign to accumulate data on outstanding trees now growing in the United States, the American Forestry Association chose this tree as being, "though not the largest, one of the most beautiful live oak trees in the United States."

Limbs of this tree reach out over a diameter of 154'. The circumference of its trunk measures more than 22'. Indian mounds in the vicinity reveal that the surrounding lands were a favorite meeting place for Seminole Indian tribes. The tree was probably a landmark when, on Easter Sunday, 1513, about 75 miles due northeast of this area, Juan Ponce de Leon first set foot on the land he called Florida.

This tree is a symbol of the bountiful life we have here in America. May the days ahead in 1958 be filled with all that is best for each one of you.

Our best wishes for the Holiday Season and the New Year ahead!

The Editorial Staff

Your request

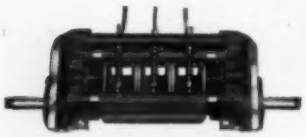
A low cost 6 roll planer and matcher with the FEATURES of the high priced machines

NEWMAN M-68
BALL BEARING
PLANER and
MATCHER

Heavy duty quill mounted side head spindles.

- Six 8" diameter feed rolls.
- All cutterhead bearings—interchangeable.
- Built-in jointing devices.
- Ball bearing belt tighteners—for all belts.
- Inclined bottom bed plate.
- Gears interchangeable—heat treated steel.

Alloy steel forged "DYNETRICALLY" balanced cylinders. Four or six knives



Sectional chipbreaker available.

Bottom head pulls out for quick grinding and changing of knives.

"A full car load of beautifully finished Lumber every day"

DELIVERY FROM STOCK—IF YOU HURRY
WRITE US TODAY
FOR FULL DESCRIPTIVE LITERATURE AND QUOTATIONS

NEWMAN MACHINE COMPANY, INC.
GREENSBORO, NORTH CAROLINA · U.S.A.

YOUR GUIDE TO *Better* ADHESIVES . . .

The Perkins Trade Mark is your guarantee of quality and reliability when you purchase glues. Since 1899, customer-confidence in Perkins has grown steadily—a deserved tribute to superior products backed by competent service and rigid ethical standards. When you use a Perkins Glue in your operations, you'll agree with other leading woodworkers—*that Perkins serves you best!*

GLUING PROBLEMS?

Dispose of them by calling upon the skilled assistance of the Perkins Technical Service Department. Specialists in gluing methods will study your particular operations and offer suggestions where pertinent. There is no cost or obligation involved in your use of this unbiased advice.

IT'S A PERKINS SERVICE!

P
PERKINS GLUES

RESIN—Hot Press and Cold Press • Liquid or Powder Type
CASEIN—A broad line to meet your specific requirement
VEGETABLE—As originated and perfected by Perkins Glue Co.
ANIMAL—Ready-to-use Liquid • Heat-then-use Gel

• • •

VENEER AND CORE REPAIR COMPOUNDS • VENEER SIZE
GLUE ROOM SPECIALTIES • MIXERS • SPREADERS • BRUSHES

RESIN
CASEIN
PERKINS
VEGETABLE
GLUES
ESTABLISHED 1899
LANSDALE, PA.
KITCHENER, ONT.

to management

Business

Most lines will continue to do well this fall and in the first quarter of '58. However, there will be some differences in production and sales figures from a year ago and, in general, these will be lower than a year ago. Consumers are ready to spend and it is predicted that they will be relatively free of debt.

At the same time, economists do recognize that we are definitely leveling out. There is disagreement as to whether this plateau should be called a recession. It would seem to your reporter that it is only a logical development. After several years of extensive buying, supply and demand are more nearly balanced and will undoubtedly remain so for several years.

Surveys must be regarded with caution, but one conducted by the F. W. Dodge Corporation this fall indicates that more than 200 outstanding economists expect a modest business rise in 1958. Typical of many comments was one from the economist of a large manufacturer who said, "1958 seems to be shaping up as a year of severe strain on the economy in some directions. Pressure on corporate profits will result in a reduction of expenditures for plants and equipment. Consumers will probably keep on spending for most soft goods and new houses."

Spokesman for the West Coast Lumbermen's Association is more optimistic in saying, "There is a general feeling that the bottom has been reached and that spring building will spark a pickup in lumber demand. The long range picture is good with increasing new families after 1960 calling for a much higher level of new home construction."

Another economist advises, "Act on the assumption that the capital goods-inventory correction now underway will be relatively shallow and brief, as in 1953-54. A bottoming out and reversal is due around mid-year '58. While supplies of virtually all materials will continue ample, it won't pay to let your inventories drop far below working level. Competition will be intense, and you may lose sales as a result."

The major stimulus to a business revival in 1958 will probably come from increased military spending. This item has been in question during the last few weeks, but it seems evident that with Russia's inferred superiority, a reversal of thinking may be necessary. If true, this cost of catching up with Russia may be much more expensive than most of us realize.

Washington

The mighty Sputnik has had more effect in Washington than was at first anticipated. Psychologically, the effect has been equal to the U.S. World War II breakthrough in the atomic field. Though publicly downgrading the Soviet advance, Washington appears to be shocked out of a mood of complacency. Public opinion is forcing a green light on rocket development and a stepped up program in the U.S.

It is predicted that there will be sweeping changes in the military budget with more funds for scientific research and development. The administration will seek ways to eliminate many items not directly related to instant preparedness to avert or fight the kind of war which the future may bring.

President Eisenhower has attempted to coordinate free world scientific reasearch; settle the interservice rivalry which has delayed the effective development of our missile program; and determine which of our rockets should go into mass production.

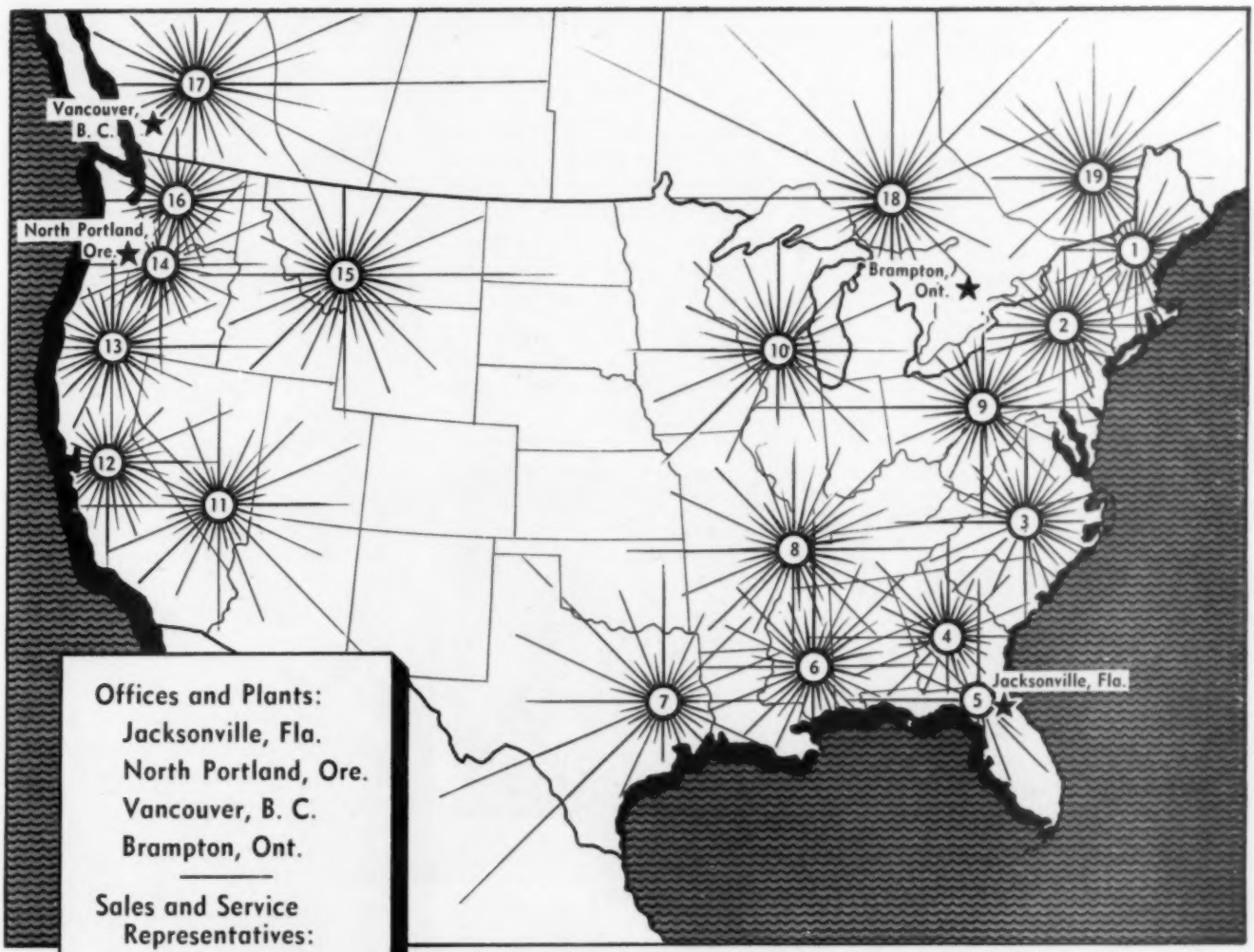
Full disclosure of U.S. progress in the missile arsenal is expected soon in an effort to calm free world hysteria. If the armed services are right, this will have the desired effect.

President Eisenhower has put the issue of medical education before business and industry: either support medical education voluntarily through contributions, or involuntarily through taxes. He has left little doubt that he preferred the voluntary method and warned against the increasing tendency to lean on government for the solution of educational and other problems. The constantly widening scope and complexity of medical education has, within a space of a few decades, quadrupled the cost of producing a qualified doctor.

Legislation & Taxes

Chances for a 1958 tax cut seem to improve. The White House, it is understood, is charting reductions in non-military spending which would trim fiscal 1959 outlays to a total of $70 billion from an estimated $71.8 billion this fiscal year. The administration may propose a $1 billion cut in spending to support farm prices. Foreign aid outlays may drop and a decline of $500 million is likely in requirements of the export-import bank.

Regardless of the fiscal situation, the Democrats in Congress will propose upping the individual income tax exemption from $600 to $700, at a cost of $2 billion in revenue.



Offices and Plants:
Jacksonville, Fla.
North Portland, Ore.
Vancouver, B. C.
Brampton, Ont.

Sales and Service Representatives:

1. E. Sherman Hall
2. Wallace Adams
3. Marvin Wolfe
4. T. R. McClain
5. T. P. McLaughlin (Lumber Handling Specialist)
6. Newell Howell
7. D. R. Battenfield
8. John Devine
9. W. L. Heston
10. Wesley Pearson
11. Frank Cook
12. A. L. Towle
13. William Hanley
14. W. H. Martin (Roller Dryer Specialist)
15. William Hotchkiss
16. Gordon Duncan
17. Bert Duffey
18. Jim Catterick
19. Alan H. Stevens

SERVICE is our business too!

SERVICE is the "extra dividend" you get when you buy Moore Equipment.

Look at the map—and see how thoroughly Moore Sales Engineers serve every wood producing and processing area of North America. These men are the country's leading experts in the seasoning and handling of lumber.

Even this map does not include all Moore Services. For example, our Check-Up Service Plan is available to plants desiring periodic check-up of their Moore Equipment.

A word from you is all that is needed to bring the services of a Moore Kiln-Engineer into action on your seasoning and handling problems. Write or phone today.

MOORE DRY KILN COMPANY

Oldest and Largest Manufacturers of Dry Kilns and Veneer Dryers

JACKSONVILLE FLORIDA · BRAMPTON, ONT. CANADA · VANCOUVER, B. C. CANADA · NORTH PORTLAND OREGON

Hoover Commission

The Chamber of Commerce of the U. S. is spearheading a drive to alert the business world and the public to the importance of Hoover Commission recommendations. The chamber's drive to gain congressional and administration acceptance of the Hoover proposals will concentrate on five major recommendations:

(1) Establish a water power policy.
(2) Improve the business management of the Defense Department.
(3) Gradually eliminate Postal Savings.
(4) Require interest rates on Federal loans to cover the government's current costs of borrowing money.
(5) Curtail government competition with private enterprise.

Realists on Capitol Hill say that, unless public and business pressure for economy in government continues at the next session, there is little chance of congressional approval for any of the Hoover recommendations. In fact, many observers feel the coming session may offer the last chance in the visible future to obtain budget reforms and an end to government competition with business.

Blame for Government Agency Mismanagement

The blame for mismanaging a government agency, so that it needs a deficiency appropriation from Congress, will be placed squarely on the head of that agency.

This was the warning issued recently to those "disgruntled spenders, booted away from the public trough, who sarcastically assert" that much of the money saved by budget cuts will be restored next session by deficiency bills.

Research

A $1 million sawmill will be built in Soviet Russia based on a new woodworking method developed by R. W. L. Laidlaw, president of Great Northern Woods Co., North Bay, Ont. The new method is a bonding process in which low grade pieces of lumber, formerly discarded as scrap, are glued or jointed, end-to-end or side-by-side. The proposed plant will be located at Archangel on the White Sea.

Irrigation leaks can be successfully sealed by hardboard liquid leftovers, according to the Oregon Lumber Co., Dee, Ore. Fibrous effluent, liquid leftovers from this company are plugging the dike and growing apples for Hood River, Ore., fruit raisers. Watch for further developments with the use of this residue.

The gummy residual is pumped into irrigation ditches and is said to drop water leakage by 30%.

Fertilizing forest trees to speed up wood production and improve timber resources may have a bright future in America, if forest fertilization research now underway in Europe is any barometer.

Although in its infancy and on a more limited scale than European work, recent U. S. research indicates that under certain conditions American forest trees, like agricultural crops, will respond to fertilizers. The American Potash Institute now supports forest fertilization research in some states.

"We found a GOLD MINE OF TOP-QUALITY LABOR in Uniontown, Pa."

...says W. F. Rockwell, Jr., President Rockwell Manufacturing Company

Rockwell Manufacturing opened its water meter plant in Uniontown, Pa., in 1953 — substantially enlarged it in 1956. Here's how Mr. Rockwell feels about the high quality of the labor available in this typical WESTern PENNsylvania community:

"Our production calls for a lot of highly skilled precision work performed to close tolerances. Our Uniontown employees have proved that a solid mining community background fits people for this sort of employment. They took very little time to train — and have turned in a record performance. We attribute these standout qualities to a fairly high level of mechanical aptitude and skill, plus a sound, healthy attitude toward work."

Send for this
FAYETTE COUNTY SKILL SURVEY*

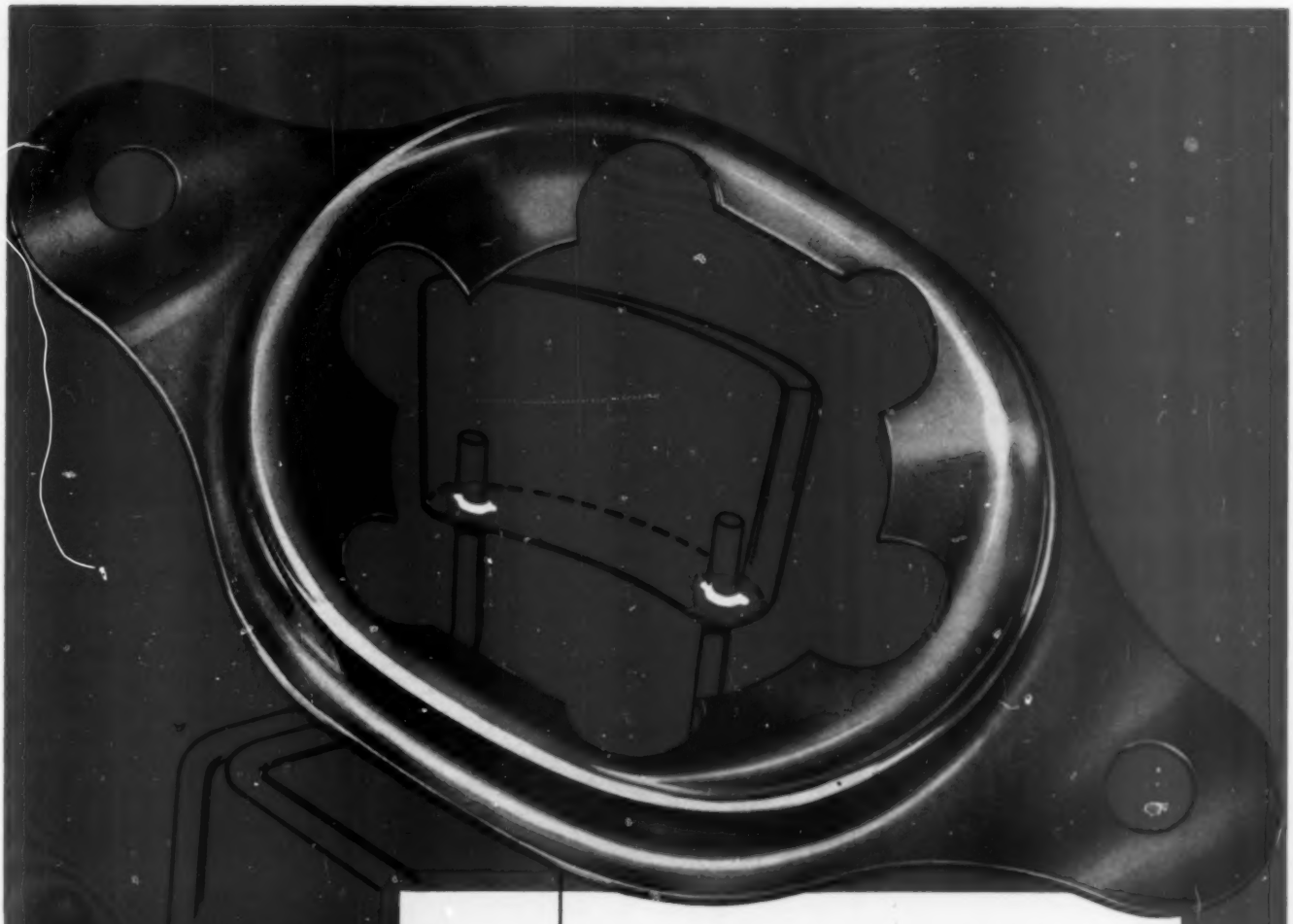
Considering a new plant location? Get this unique, factual study of specific skills possessed by *available* workers in this typical WESTern PENNsylvania area. Check it against the skills *you* need. Mail coupon below.

**Prepared January, 1957 by Penna. Dept. of Labor and Industry*

Area Development Department WD-4
West Penn Power Company
Cabin Hill, Greensburg, Pa.
I would like a copy of the "Fayette County Skill Survey", showing specific mechanical aptitudes and skills available in the area.

Name_____ Title_____
Company_____
Address_____
City and State_____

WEST PENN POWER
an operating unit of the WEST PENN ELECTRIC SYSTEM



combination trim-piece and chair-back fastener simplifies K-D shipment

CUTS SHIPPING COSTS

CUTS STORAGE COSTS

CONCEALS RAGGED EDGES AT ENTRY POINT

AVAILABLE TO FIT SIX STANDARD TUBE SIZES

PLATED OR BLACK FINISHES AVAILABLE

Trim-piece is simply placed over hole drilled in chair-back structure and fastened with wood screws or upholstery nails. Chair-back can then be pushed onto tubular metal supports to complete chair assembly in store or home. Fastener's teeth bite into tube walls and hold securely.

UNITED-CARR FASTENER CORP.

31 Acorn Street, Cambridge 42, Mass.

MAKERS OF POT FASTENERS

YOUR *dependable* SOURCE FOR

HARDWOOD PARTS.... GAMBLE BROTHERS

- Machined
- Semi-Machined
- Rough
- Solid
- Laminated

To meet your requirements, you may choose from many species of hardwood and designate the grade—paint or clear—for your particular job.

Special shapes and unusual sizes precision-made for accuracy and dependability.

All laminations are guaranteed to be permanently bonded for lasting service.

Since 1900—Engineered Wood Parts in Southern and Appalachian Hardwood, Walnut and Mahogany.

GAMBLE BROTHERS, INC.

4601 Allmond Ave. • Phone EMerson 3-2653 • Louisville 9, Ky.

GAMBLE BROTHERS GB GUARANTEED BOND

Member H.D.M.A.

LETTERS TO THE EDITOR

Write the editor if you are interested in contacting any of these readers.

"We understand that there is a small multiple groover manufactured in the city of Portland, Oregon. Please advise the name and address of this firm. We want to groove 4′ x 10′ plywood panels with this machine."

—W. W., Missouri

"We are interested in learning the names of manufacturers of machinery for turning hickory pick axe, sledge and hammer handles; also for straight work like ash baseball bats. We noticed a machine in your October issue which might be suitable for this. Can you give us more details?"

—B. R., New York

"Can you give us further details about the pencil machine described on page 31 of your September issue? Please send us full information, plus cost and where we can see one in operation."

—E. W., New Jersey

"We enjoyed reading the article regarding finishing of arrows by machine. This appeared in your October issue. While reading the article the thought occurred to us that you may be able to help us in attempting to locate a manufacturer that makes the type of machine we need. This machine is a gang jib saw capable of gang ripping lumber up to 2″ thick. It is used for gang ripping edgings as in the manufacture of lath."

—J. W., Michigan

"We have been advised that in your September issue, there is an article on page 31 where a company can manufacture pencils holding a circular shape with relatively perfect cross section with tolerances of less than .0005″ in dia. The statement is also made that this same tolerance can be applied to dowels. In our long experience in the woodworking field, we question that a tolerance of .0005″ in dia. can be applied to hardwood dowels in general, such as are produced by dowel manufacturers."

—H. A., Massachusetts

"For one of our customers, we are trying to locate the manufacturer of a forged steel shaper holddown clamp made with ball bearings at each end of the fulcrum bolt. Can you help us?"

—H. D., North Carolina

"I am in search of a factory, or factories, that make electronic glued edge grain hard maple bench tops. Do you know of factories that specialize in edge grain maple tops?"

—L. F., Minnesota

"An article, 'Converting Scrap Into Dollars,' in the March issue of WOOD WORKING DIGEST is most interesting. Can you supply more detailed information? One particular phase is the means for separating sawdust from shavings."

—S. L., North Carolina

Saves 6 times production costs

"I would hate to think of doing the job of hanging 500 solid birch flush doors without the SKIL Model 100 plane," states E. C. Conrad, Superintendent of the V & M Construction Company, St. Louis. "Several planes were demonstrated to us when we were in the market but we chose the SKIL and happy that we did it. It has increased our production at least six times."

Saves 50% in time

"A SKIL Model 100 plane is 50% faster than other makes and ten times faster than some of the sanding methods we used to use," says Mr. Don Dupree, foreman of the Atlanta Boat Works, Atlanta, Georgia. "Our new SKIL plane is lighter than anything we have used before. On production, the lighter and easier the tool is to operate, the faster the work."

Woodworkers SAVE with SKIL Tools

Saves labor costs 6 times

One of the big problems of Modern Store Fixtures, Dallas, Texas, was the assembling of furniture units. Former methods continually delayed production. "All of our immediate assembling problems were solved by the purchase of one SKIL driver," says Sidney L. Knopf, owner of the company. "It was paid for in the first week *plus* saving me labor costs up to 6 times."

With one SKIL tool, you save

When you work with any kind of wood, you will get savings from the SKIL Model 323 Belt Sander. Powerful motor gives the extra power for continuous operation. Oversize fan prevents overheating. No matter what you have to cut, plane, edge or sand, there's a SKIL tool that can do the job faster, better, cheaper. Let your SKIL distributor show you why.

Write SKIL direct for free literature and name of your nearest distributor.

Made only by SKIL Corporation, 5033 Elston Avenue, Chicago 30, Ill. In Canada: 3601 Dundas Street West, Toronto 9, Ontario. Factory Branches in all leading cities.

SKIL
PORTABLE TOOLS

Comments From The Editor

On New Products, Industry

Trends and Current Events

Experiment in public response was tried at Jamestown's fall market. Immediately after the retailers had completed their shopping and buying, doors were thrown open to some 3000 people who paid $1 a piece to see the new showings. During this special event, all price tags were removed and no sales were made. Money went to Red Cross. Experiment indicates that the public is interested in furniture styles just as in the automotive field. Test may pay off in future buying trends.

A golf shoe manufacturer is capitalizing on wood's resilience by using a wood insert between the inner sole and outer sole as a shock absorber in golf shoes. These foundation inserts lessen foot fatigue when walking on sun-baked fairways. Foot specialists have long urged wooden floors for homes to save housewives from backache troubles. There is a definite "give" to wood flooring.

Versatility in an unexpected spot. We recently read an ad from a well known midwest wrought iron products company. Wrought iron legs seem to be on the way out! This firm is now manufacturing unfinished, wooden legs of kiln dried hardwoods.

American Walnut Manufacturers Association has been gathering nuts this fall. Nearly 5000 bushels were gathered. These walnut seeds—some 2 million of them—will be available to farmers and landowners in the midwest for planting purposes. Because of the increasing demand for walnut furnishings, the American Walnut industry has long given special attention to an active forestry and conservation program. A brochure, "Growing Walnut for Profit," is available from the American Walnut Manufacturers Association, 666 N. Lake Shore Drive, Chicago 11, Ill.

Two of the most discussed present-day industry problems were included in the fall meeting of the Architectural Woodwork Institute. These problems are wood preservatives and prefinished school cabinets. All wood products manufacturers will be interested in some of the thoughts expressed by John Reno in his talk on promoting wood products. Be sure to read it in this issue of Hitchcock's WOOD WORKING.

dress 4 sides at 1 time

New FAY & EGAN

FOUR-SIDE PLANER-MATCHER MOULDER

model 969

Mould shapes like these . . . in one operation!

FOUR SIDE DRESSING

DOUBLE SURFACING

TONGUE & GROOVE SHEETING

SHIP LAPPING

DROP SIDING

BEADED SIDING

FLOORING

MOULDINGS

- Four-side dressing in one operation
- Double surfaces
- Capacity to 20" wide, 8" thick and 4" four-side
- Ball bearing motors for smooth running, high-speed operation

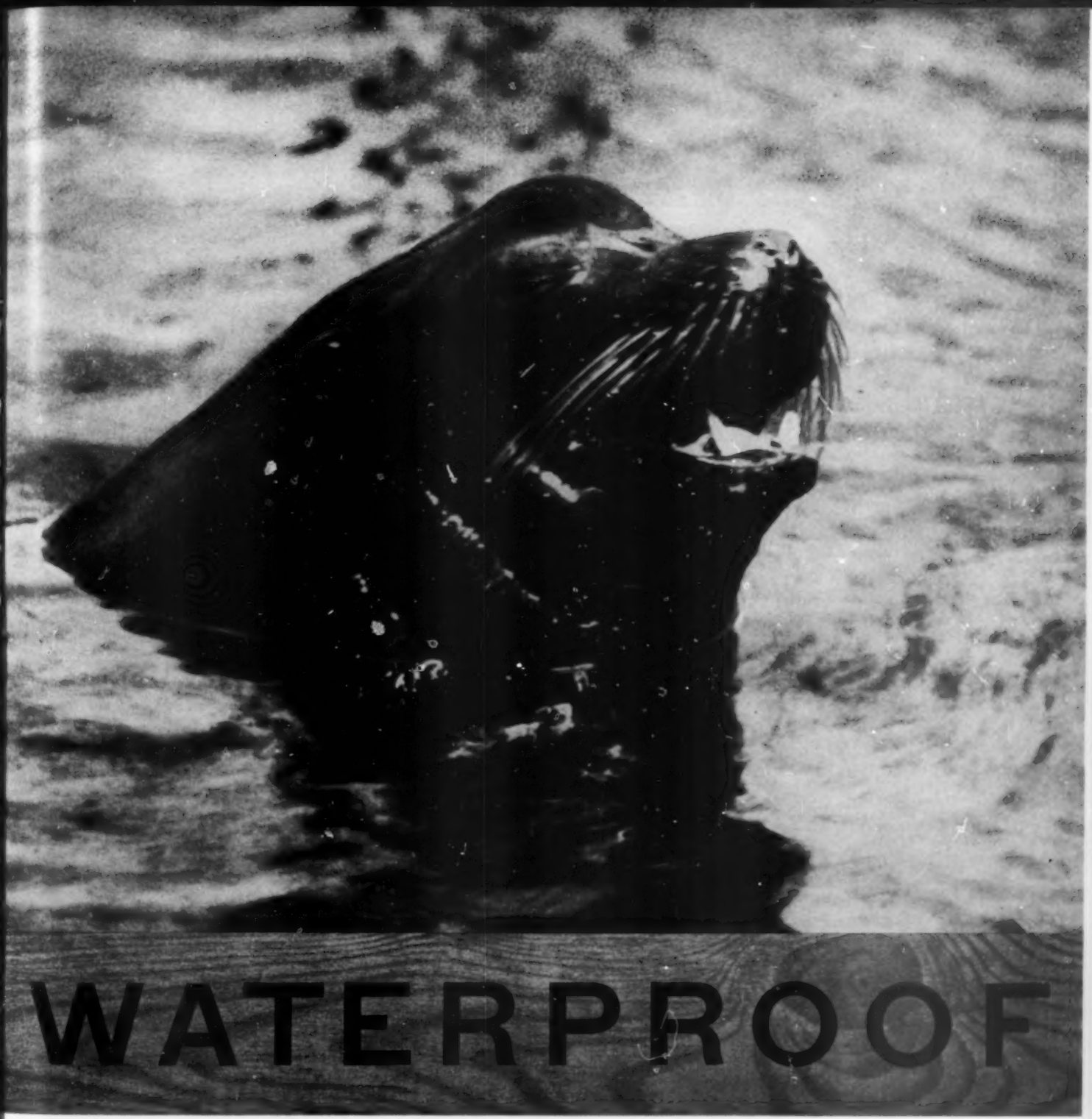
For flooring, moulding, siding production, this new Model 969 Planer-Matcher-Moulder speeds operations on all four sides at one time! Sturdy construction, rugged ball bearing motors, four knife safety type round cylinders . . . Top quality features assure low-cost production and years of trouble-free service.
Convenient controls permit easy adjustments. Matcher units may be adjusted even when in operation.

Write Today for complete informative brochure

FAY & EGAN CO.

2023 Eastern Ave., Cincinnati 2, Ohio

World's Oldest Manufacturers of Woodworking Machinery



LAUXITE* MF300, a Monsanto melamine resin adhesive, will produce completely waterproof bonds on plywood and edge-glued lumber. The bonds meet military as well as rigid civilian requirements for waterproof plywood manufactured by elevated temperature methods.

With a durability comparable to phenolic resins, Lauxite MF300 has a faster cure rate, lower platen temperatures, higher permissable veneer moisture contents, longer maximum assembly times, light colored glue lines, excellent storage stability, and easier clean-up.

Investigate Lauxite MF300 for your critical bonding needs. Write for samples, complete technical data, to Monsanto Chemical Company, Plastics Division, Room 2043 Springfield 2, Mass.

Other Monsanto Adhesives include:

LAUXITE 326 *A melamine-urea adhesive for hot press gluing when greater boil resistance is desired.*

LAUXITE MF325 *A specially formulated powdered melamine resin binder for granulated wood.*

RESINOX *phenolic resins, liquids and compounds, for granulated wood molding and hardboard.*

LAUXEIN *versatile protein adhesives with specific formulations to meet varied bond requirements.*

LAUXITE *urea resin glues, both liquid and powder, for high water resistant bonds.*

Monsanto

*LAUXITE, RESINOX, LAUXEIN: REG. U.S. PAT. OFF.

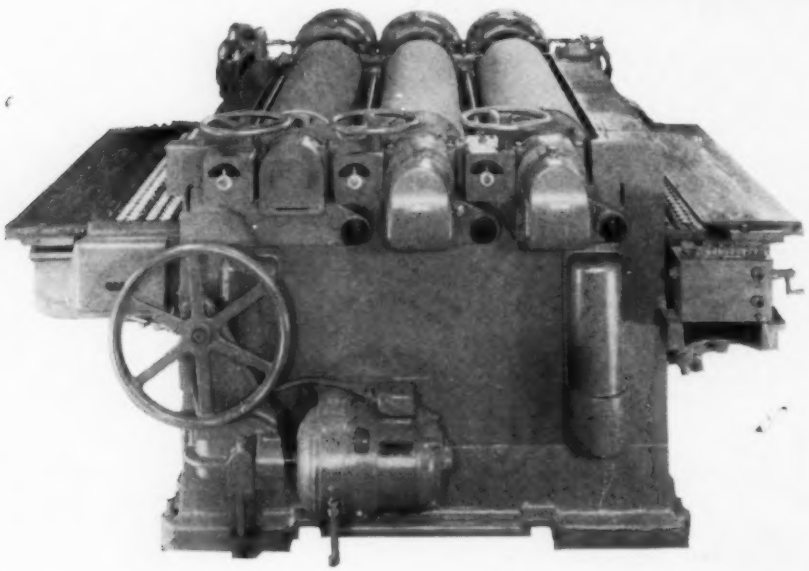
For over 125 years, H. B. SMITH MACHINE CO. has traditionally been

FIRST

in PROGRESS

in QUALITY

in SERVICE



here's why . . .

Since 1832, H. B. Smith Machine Co. has supplied the woodworking industry with quality equipment, engineering skill and service to its customers in all parts of the world. It was in 1896, that this company introduced the first Endless Bed Drum Sander . . . and has constantly improved this equipment to maintain Smith leadership in this important phase of woodworking operations.

EXCLUSIVE FEATURES on Smith 2, 3 and 4 Drum Endless Bed Sanders include:

- Self oscillating drum mechanism.
- Simple, positive BED adjustments.
- Simple, positive DRUM adjustments.
- Handy location of all hand wheels.
- Sanding thickness to close tolerances.
- Totally Enclosed Motors

RESULTS: High quality sanding . . . Efficient Production . . . and lower costs.

Recognized by Morgan Mfg. Co., Grand Rapids, Michigan, Manufacturers of quality church goods and furniture.

Write, telephone or wire for more information and helpful literature. Also ask about our lease plan! Do it today!

WOODWORKING MACHINERY MANUFACTURERS' ASSOCIATION WMMA

H. B. SMITH MACHINE CO.

BURLINGTON COUNTY, SMITHVILLE, NEW JERSEY

You'll enjoy the humorous essay by Nelson Nash. There's a world of truth in it. Possibly more furniture centers could profitably consider opening markets to the public.

Howard Hanlon, recently re-elected president of the National Hardwood Lumber Association, said at the fall meeting, "The public is just now beginning to appreciate the exotic, exciting beauty of hardwoods in the home—whether it be in the form of paneling, furniture or hardwood floors. It is true that we have lost some markets to substitute competitors, but we must face up to the fact that our supply and demand are in pretty good balance."

California has been building 90% of its schools of wood. West Coast Lumbermen's Association states that reason is two-fold: (1) wood schools are safer in earthquakes; (2) wood schools can be built which are more attractive and cost less than schools of other materials.

More furniture manufacturers are finding it pays to use their own vans to ship merchandise to retailers. This statement is based on a recent survey by National Furniture Traffic Conference. Survey indicates that 14.3% of industry's total outbound tonnage is transported in producers' privately maintained vehicles. Commercial truck lines are being accused of charging too much for poorer service.

A rescue plan for import-injured U.S. firms will be ready for Congress early next year. If Congress approves passage of the proposed bill, Federal loans from Small Business Administration will be made available to domestic producers whose markets have been injured by competition from abroad.

What is the current trend in design of home interiors and how does it affect our industry? According to recent reports more and more sound and viewing equipment being introduced in living rooms, recreation rooms and bedrooms is of wood. Wood provides beauty, Wood housing gives resonance and builds up the sound. Wood is a safe material. "In an electronic age, it's comforting to have a material around that is non-conductive. There is no shock hazard in a wood cabinet!"

Let's Face It!

YOUR COMMUNITY DEPENDS ON YOU!

Of course you are anxious to fulfill your social responsibilities to your community. But this is only possible when your plant is producing profitably.

With increasing competition and higher costs the obvious answer to the problem is more production and better quality. Improve your production facilities . . . get rid of the old clunkers now and replace them with modern machines.

Member companies of WMMA are well qualified to advise you on the proper equipment for your needs. Let them help you get started on a realistic, profit-producing replacement program. Time is important. Send in the coupon today.

Put a profit in your Woodworking with MODERN MACHINES

WOODWORKING MACHINERY MANUFACTURERS ASS'N.
1900 ARCH ST., PHILADELPHIA, PA.

Please send further information. I am interested in the following types of machinery_____

Name _____

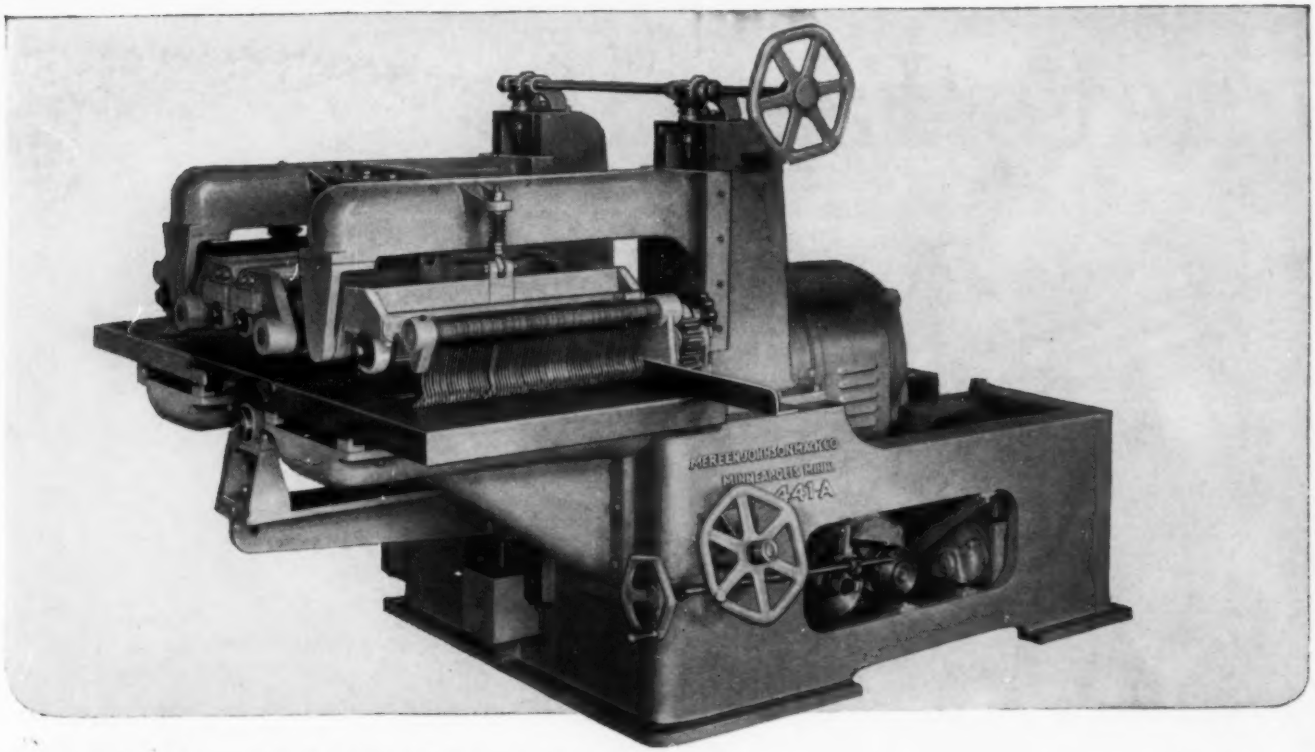
Company _____

Address _____

City _____ Zone _____ State _____

WOODWORKING MACHINERY MANUFACTURERS ASSOCIATION

1900 Arch Street Philadelphia, Pennsylvania



MEREEN-JOHNSON NO. 441A

extra heavy duty GANG RIP SAW

MEREEN-JOHNSON has manufactured gang rip saws for 40 years. Power, speed and accuracy have always characterized M-J machines. This new No. 441A has all the features of previous models, with some important new ones added.

- Now *eight power-driven feed rolls*—two pair infeed and two outfeed. This is a double safeguard where utmost accuracy of production is required.
- 7200 RPM arbor speed puts extra power where it's needed.
- Vertical arbor adjustment simplifies bed plate removal.

If your production includes sheet materials, hardwood flooring, furniture core stock or wirebound boxes—it will pay you to investigate this big, rugged M-J No. 441A Rip Saw.

ONE-PIECE ARBOR BEAM

Exclusive with M-J is this beam mounting of motor, arbor and bearings in a single rigid unit.

MEREEN-JOHNSON MACHINE CO.
4401 LYNDALE AVE. NO. • MINNEAPOLIS 12, MINNESOTA

CUT-OFF SAWS	DOUBLE CUT-OFF SAWS	MULTIPLE CUT-OFF SAWS	GANG RIP SAWS
TENONERS	VENEER & PLYWOOD SIZERS & JOINTERS		RESAWS

Send For The No. 441A Bulletin

Wherever one has a view, framing it with an Andersen Windowall makes the beautiful outdoors an exciting part of daily living.

ENGINEERING WOOD WINDOWS INTO WALLS

By John Hyler

▼ Windows are not what they once were! Wonderful changes for the better are wrought in residences, on both new construction and remodeling, since genuine engineering attention has been given this area of endeavor. Probably no other manufacturer of sash, windows and frames has made so many vital improvements in this direction than the Andersen Corp. of Bayport, Minn. Units made by this company are weather-tight and leak-proof. Whether building extra rooms on existing houses, modernizing a kitchen, enclosing a porch or expanding an attic, sash and windows especially suited to the purpose are found in the wide line made by this firm.

Some of these sash tilt; some of them glide. Certain units pivot; others serve as stationary picture windows. Double-hung window sash in the line lift right out from the frames, allowing windows to be washed easily and safely from the inside. Casements open at finger-tip touch. Gliding windows, which slide horizontally open on a plastic track, are available in very large sizes and can be instantly removed for cleaning. Pre-fitted hardware and weatherstripping have much to do with popularity of different units.

In 1903, Hans J. Andersen laid the foundation for a business that was to revolutionize the wood window industry. Specifically, he began specialized manufacture of stock window frames. In the beginning, no attempt was made to introduce new designs; commonly-used patterns of traditional sash and frames were made. From the outset, however, particularly accurate manufacturing techniques were practiced, on specialized machines.

Space will not allow inclusion of many interesting things in the history of this firm. It may be said that one outstanding milepost was development of the two-bundle method of supplying interchangeable frame parts, bundling all vertical members together in one package; all horizontal members in another. Another remarkable phase in product history was introduction in 1930 of the famous locksill joint.

Today, with Mr. Fred C. Andersen as president, this is still a forward-looking enterprise. One might tell of various things which have been worked out to the advantage of employees in general; also of the thoroughness with which anything concerning company policy or any other condition affecting any employee is explained and/or adjusted. Any employee is free to take up any matter with his supervisor; with the personnel office, or even with the president directly.

Designing, Testing and Model Making

Andersen research engineers are continually looking for new and improved methods and designs, to keep windows distinctive on the one hand; better on the other. *Windows of tomorrow are being created on Andersen drawing boards today.* Even the high skills of these men in the planning stage, however, are not relied upon as ultimate proof of the worthiness of any product. Units designed and developed are produced experimentally; then subjected to the most rigid tests under actual performance conditions.

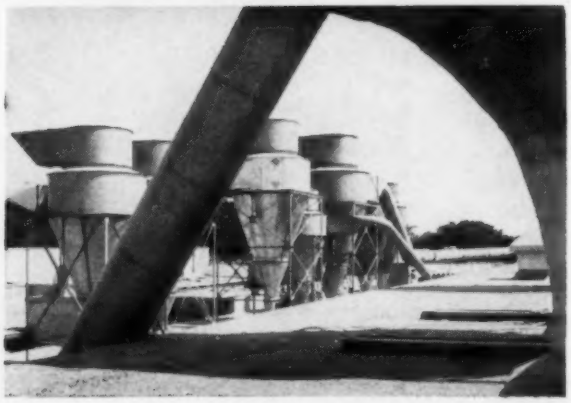
Once a new unit has been fully approved and earmarked for pro-

The Andersen research engineering department where engineers continually look for a means of making a good product better.

The model-making shop at Andersen where window units are made up for display by lumber yards and dealers.

Main scrap belt conveyor, carrying waste wood to a Jeffrey refuse hog, which is not visible. The wide belt in the foreground is approaching. Scrap is deposited here from auxiliary conveyors.

The Greenlee roller-feed ripsaw in the Andersen plant rips narrow material. Observe the safety sign, and also note the narrow conveyor belt (white arrow) which is evidently made from ordinary transmission belting. This conveyor returns pieces to the feeder for additional ripping as the need appears.



View from the plant roof, showing several cyclone separators incorporated in the exhaust system installed at Andersen Corp. by the Day Company of Minneapolis.

duction as a standard item, it becomes important to acquaint architects, builders, and the public in general with the advanced product made available. To this end, a model-making shop is maintained, where window units are made up for display by lumber yards and dealers.

Obviously, a firm as progressive as this one is wide awake to benefits obtained from proper publicity, letting the public know continually about the extremely high skills that have been developed to make quality windows. Interesting in this particular respect is a beautiful glassed-in solarium in the lobby of the Andersen office building. Walled in with glass, and provided with a remarkable glassed-in dome, it has been referred to as a "carpet of grass, surrounded by glass." It provides a restful area where trees, grass and flowers thrive all year long.

On the operational side of things, equipment has been carefully selected and installed to do the best job at the most reasonable cost. The company makes use of three horizontal-return-tube boilers, each of which yields 250 boiler h.p. Wood chips obtained from factory waste constitute the fuel. The boilers are equipped with automatic pressure control; also with automatic smoke control.

Kiln Dried Lumber Purchased

Lumber is purchased from the supplier already kiln dried, so that kiln drying facilities required by the firm are at a minimum. Nevertheless, one dry kiln has been installed with a 65,000 board foot capacity. This is used during the wet rainy season, when lumber might otherwise take on slightly too much moisture for best results.

Ponderosa pine is the material used, in No. 1, No. 2 and No. 3 grade shop lumber. No. 2 grade is used chiefly. The exhaust system at Andersen gathers waste, shavings, and chips from all machine locations in the plant and is completely adequate. Installed by the Day Company of Minneapolis, the system incorporates a sufficient number of fans and cyclone sepa-

rators, strategically positioned, to do a thorough job.

Lumber is received and unloaded at the plant at the rate of about 40 carloads per week. Each carload is carefully checked for moisture content. If moisture content is more than 11%, the lumber is set aside and kiln dried. In production, lumber goes to the ripsaws and cutoff saws; thence to subsequent operations. However, considerable inventories of cut stock are built up. These can be drawn on as required for different Andersen units ordered by distributors. The cut-stock inventory averages around 3½ million board feet.

Lineal machining and cross-milling, routing and other special operations, weather-stripping, assembling and sanding, are all involved. Remarkable economy of both labor and material are realized all along the line. Small pieces of sound wood, unsuitable for processing into sash or frames, are nevertheless used for making solid door cores. Sawdust is blown into box cars for shipment; the remainder of the waste wood is hogged into chips and burned in the boiler furnaces.

Ripping Operations

Lumber arrives at the factory already dressed. As with most products where length of individual pieces is substantial in proportion to width, ripping is the primary operation. On some narrower and shorter pieces (as for instance stock for sash bars and muntins) straightness of the stock is a secondary factor. It is always true that the shorter material is cut, the more crooked original stock may be. Moreover, a very slight bow in a sash bar is automatically straightened in assembly, when the glass is inserted. A roller-feed Greenlee ripsaw is considerably used for ripping narrower stock of this kind.

The great bulk of ripping at the Andersen plant, however, is performed on 12 Mattison overcutting straightedging ripsaws. These are particularly well adapted for safe processing of short stock; also for straight ripping of long lineal pieces from lumber, before they go to the cutoff saw. Narrow edgings are often ripped down to a size where they make bars and muntins to ad-

Cutoff sawyers are seen operating to the right, one behind another. A board in front of each accommodates the cutting bill. The arrangement is such that cut stock is automatically deposited on the wide belt conveyor to the far left, while waste wood and scraps drop to the narrower belt conveyor. The cut-stock sorter is seen at the wide belt.

To keep their huge manufacturing operation completely flexible, regardless of the particular units they may be called upon to make in quantity at any time, a huge inventory of cut stock must be maintained in storage rooms. Most of this cut stock is carefully piled on skids, and stored several high, to make the most of storage space. Here, a Clark fork lift truck is seen placing a skid load into high storage. Each load is 5' high.

Mattison straightedging ripsaw at work in the Anderson plant, sizing thin, short pieces, which will be used for muntin bars. Subsequently, these bars will be passed through a Mattison molder. Observe how a lineal lumber counting device has been attached to the outfeed end. This eliminates the human element in obtaining the count on lineal footage for a given run.

Two of the Mattison ripsaws operating on preliminarily cut-stock. Note the offbearer is piling sized pieces up against a backboard to his left hand, and putting ripped edgings in a special tying trestle at the right. The twine seen adjacent is evidently used to tie these strips into bundles for faster and more convenient handling.

vantage. Short cuttings, which would otherwise go into waste, are also processed into muntins to the fullest possible extent. Anything too small or too short for muntins goes into blocks for door cores.

The picture on this page illustrates some of the care used in ripsaw operations. Where short pieces have preliminarily been cut to a specific length, as in this picture, the total number of pieces ripped can be quickly determined by dividing the full lineal count by the length of one piece. Note the arrangement of the short receiving table, placed at just the height required to allow bars ripped to drop down slightly, preventing any endwise jamming. Whenever a piece passed through is wide enough to make more than one bar, the offbearer simply slides it back across the saw table to the feeder, for re-ripping.

Lineal ripped lumber leaves the ripsaw by way of an overhead tramrail conveyor, and is carried to the cutoff saws. Each cutter has a schedule posted in front of his machine which tells him what lengths are presently required by the factory. Here, proper lengths of parts are produced for all units made in the plant.

Materials Handling Facilities

An interesting array of handling equipment is used by the Andersen Corp., which plays no small part in over-all efficiency. In the yard, a Plymouth 30-ton switch engine is used, so that railway cars can be moved to points desired as requirements develop. A conveyor is used for unloading box cars to storage, on a second deck. Large Ross carriers and stackers for lumber are employed. Handling equipment includes eight fork and platform stackers; twelve platform riding jacks; sixteen walking electric transports; eight walking transtackers; and one hundred seventy-five hand walking jacks.

Special conveyors are also used inside the plant, for assembling operations, in the packing department, etc., not to mention those employed for carrying cut stock, waste, and other material. Cutting conveyors in operation are particularly interesting; these are positioned so as to travel transversely to travel of stock at the saws. Undercutting saws are used. Immediately to the left of the cutoff sawyers, one belt conveyor receives cut stock and carries it to a pick-up man, who sorts it for use. Another belt conveyor carries scrap material from the cutoff saws, depositing it on a main scrap conveyor.

The picture on page 28 shows one of the conveyor setups. Observe the sweep located about midway down the belt. This moves all remaining waste over to the right hand side of the conveyor. The reason is that a man is stationed at the top end of this belt, on the right, out of sight in the picture. This workman picks out such pieces as can still be used for core blocks. He throws these pieces into bins, while the balance of the material proceeds to the refuse hog. Use of the sweep shown eliminates necessity for the man at the top to reach far out onto the belt, making the work both safer and less tiring. Material going to the hog is reduced to fuel, and blown to the boiler furnaces.

Final pieces of usable stock picked from the top of the waste conveyor and thrown into bins are later withdrawn as the schedule dictates, and are further processed, sizing them cross-sectionally for core blocks. Making of slab cores is obviously a gluing operation; in addition to this, a certain amount of edge gluing is performed. • • •

A "torture chamber"? This room is used to submit every Andersen design to a "hurricane test" for weather-tightness. The sash here is being checked to see whether the slightest bit of moisture finds its way through. After a design has been approved in this manner, advanced quality control in the factory insures dependable, year-around protection

To be continued next month when our reporter describes gluing, assembly and machining operations at the Andersen Corporation's Bayport, Minn. plant.

In The Months Ahead

Here are just a few of the interesting, helpful and informative articles that will be appearing in Hitchcock's WOOD WORKING during the next months . . .

- Does a Centralized Quality Control Program Pay?
- These Panels Stay Glued!
- Electronic Dynamic Balancing of Cutterheads
- Machining Wood to Close Tolerances
- How Can a Metalworking Engineer Help the Wood Products Manufacturer?
- Particle Board in the Prefab Industry

Women and Wood Are Wonderful!

By Nelson Nash

The alternative title for this article, as suggested by Mr. Nash, is "I Love Women!" Conservative editors felt this a little too shocking for a technical publication such as this. Take your choice of titles, but read this article to see how women love wood.

▼Never before has such a provocative and controversial headline appeared in a publication devoted to wood products manufacture! Historically, woodworkers have never been too fond of women, and with right. Contrary to the deceitful theories of female school teachers, the Pilgrim Fathers came to this country because they heard that here the women did all the work—including logging, lumbering, sawing, grading, stacking—while the men went out fishing and hunting, truly a civilized state of affairs that can hardly be improved upon. Unfortunately, the Pilgrims—gentle, sweet, considerate like all males—brought their womenfolk along, who were spoiled beyond redemption, and who refused to play "Indian." Instead, they invented a new, insidious game, called: "A Woman's Place is in the Home."

Woodworkers gather for the annual Feast of Lamentation.

So, while the defeated lumbermen assembled at conventions to cry on each other's shoulders, their victorious women used their mates' spoil of battle to purchase all kinds of articles made of wood, from lakefront log cabins to backyard dog houses, and from handcarved chessmen to carving boards for cheeses. This enabled the lumbermen to postpone their threatened mass suicide for a year, and hold another "Feast of Lamentations" instead. There is only one ego shattering conclusion possible: The welfare of the lumber and woodworking industries is completely dependent on the whims, wants, wills, willies and nillies of our female population.

This can easily be proven by a look at copies of home magazines of four or five years ago. The ads at that time panted with ecstasy over "the hungry look" in furniture, featuring brassy, polish-me-forever

armrests, or massive table tops supported by skimpy, wrought iron legs. The final point of interior desecration was reached when kitchens were furnished with white-as-a-sheet, get-dirty-quick, metal cabinets which radiated a "hospital-in-the-home" atmosphere. Well brought up children called their mothers, "our head dietician."

To appreciate the complete and dramatic change that has taken place, one need only walk to the nearest corner newsstand and glance at current issues of these same magazines. Practically the only metal that can be found today is in the staples that hold the pages together. Furniture, wall paneling, room dividers, accessories, and even window shades are now made of wood.

To understand the moral of this lesson, we must first grasp the morale of the situation, which boils down to a simple analysis of the difference between men and women. Women are stronger than men, because they are less gullible, less impressionable, not as easily panicked, more foresighted, and holders of the national pursestrings.

When a lumber salesman called on his customers during the early, eerie 50's, instead of orders he received dire prophesies of impending doom and gloom. Plastics and metals—so he was told by these amateur Jeremiahs—were sure to inherit the earth.

"What good are you?"

"I never noticed . . . your feet are clay!"

Fortunately for all of us, the ladies did not become frightened. Women know and graciously accept the fact that, come what may, designers must design, and they are forever sentenced to discard and ridicule their last year's efforts in order to stay in the precarious design business. Keeping a cool head, women are able to look some of these fashionable offerings straight in the face and ask, "What good are you?"

Women are more talkative than men, in addition to all their other fine attributes. Thus, by word of mouth, they were able to spread the news, that the only miracle about some of these new, highly "pressuretized" miracle materials was that they managed to survive the transport from the store to their homes. The metal that goes into some of the home furnishings is a very poor relation to the armor plating of a battleship. While bullets will ricochet off a tank like ping-pong balls, junior's pea shooter may leave an eternal mark on a metal cabinet. Last year 85% of all the women who installed new kitchens chose wooden cabinets!

The other false god who has cast terror into the hearts of the lumbermen and woodworkers is the formidable idol "Plastic." For a time, women joined in this worship. Yet, their female curiousity made them look up and around even while they were kneeling in adoration, and that's when they discovered that the idol had feet of clay.

Lest we be accused of exaggeration and partisanship, we shall quote from TIME, October 14, 1957, page 105: "The U.S. appliance industry can also learn some other important lessons from Detroit Edison. The company's repair experience has turned up frequent evidence of poorly made, badly designed appliances. Plastic knobs, handles and moldings often break almost as soon as the appliance is unpacked."

Perhaps the most tragic example of a whole industry becoming hysterically panic-stricken is the monstrous capitulation of the women's wood heel manufacturers. Until about 1953, approximately one million feet of hard maple were used weekly for high heels. Then some designers decided to introduce plastic heels, through which one could see. With alacrity and enthusiasm worthy of better causes, the heel manufacturers converted their plants so that now probably more than 50% of all heels are plastic.

However, the hoped for shot in the arm seems to have been slightly off target! Dynamic secretary of the North Eastern Lumber Manufacturers Association, E. Broderick, recently declared in a speech that plastic heels are much more expensive, they melt in hot weather and become misshapen, and they are almost impossible to repair. Pouring a little more oil on the fire, we might add that plastic heels are non-shock absorbing and they cause severe back and spine aches, tiredness, and a grotesque wobbling

"We have a new program this year called 'Wood Is Wonderful!' "

of the cheeks for the unfortunate wearer.

So far, we have dealt primarily with the utilitarian aspects of wood products, and to be fair, we want it to be known that we do not propose turning back the clock. Wood, metals, and plastics all occupy important places in the economy and welfare of mankind. Just let them all remember their places and not try to usurp each other's position. But in a contest of beauty, elegance, grace, refinement, charm, or splendor, even the presidents of U.S. Steel, Alcoa, and DuPont will agree with the most primitive backwoods sawmill operator that a piece of lumber or a sheet of plywood is infinitely more gorgeous than a sheet of metal or plastic.

Let us take a lesson from those shrewdest of salesmen, the automobile manufacturers in Detroit. They do not have much use for men, for they know only too well, that if men had their way all cars in this country would be either grey, green, blue or black, with burlap upholstery, and almost the same design year after year. By appealing to the American woman's vivacious sense of fashion and beauty, Detroit is producing and selling about six million cars a year with multi-toned exteriors, and rainbow-hued interiors, which make it possible to camouflage the same car with dozens of color combinations.

Potentially, woodworkers should be able to satisfy these basic female cravings for color, beauty, utility and individuality. No two pieces of wood are the same, and hence, no two living rooms, bedrooms, or dens will ever look alike. But no one ever made any headway who winked at a beautiful girl in the dark, and therefore, our industry will have to make a more determined effort. How?

Even if funds for a star studded sustained television program were available, we would still advocate a more unusual and considerably less costly course of action. Here is our blueprint for a triple stage rocket designed to put our industry into an orbit of happiness, that is simply out of this world.

Arrange Field Trips to Furniture Factories

There are thousands of women's clubs all over the country whose program chairmen turn prematurely grey thinking up activities for their members. Would women be interested in such a program? There are few things they'd like better. For instance, one of the highlights during the 1957 Forest Product Research Society's convention in Buffalo was a visit to the factory of the Kittinger Co., Inc. to which the ladies were invited. They displayed such keen enthusiasm and interest during this trip that the committee had to arrange for a second encore visit to the Kittinger plant.

In the informal atmosphere of the workshop, the ladies asked many questions they would never put to a furniture salesman in a showroom, for fear of betraying their ignorance. Some of us so called "sophisticates" snickered. We should have cried instead. For by contrast, the women in our group displayed such a deeply complete and exhaustive knowledge of fabrics and colors, which painfully pointed up the sad fact that the lumber and woodworking industries had done a very poor job of public relations indeed.

There is practically no cost whatsoever putting such a program across. No great organization is needed, at least not in the beginning. Such visits can be arranged by nearly everybody in our industry whose wife, sister, daughter or mother belongs to a women's club. Thus in a comparatively short time millions of women throughout the country can get a behind-the-scenes glimpse of how furniture is made, what constitutes quality, where wood is superior, and why wood will always be beautiful.

If any of our readers feel sufficiently inspired to arranged for such a group visit, we are sure the editors of this publication would like to know about it.

Set Up a Speakers' Bureau To Supplement This Plan

From the high caliber of the discussions during lumber conventions, it is obvious that there are many in our midst who are effective speakers with pleasant personalities who would make fine goodwill ambassadors. Prepare a speaker's kit for them with pictures of trees, samples of woods and finishes, and let them answer questions. If this be true, now is the time for woodworkers to become educators.

Organize a Liaison Office

There should be some way for the woodworking industry, architects, designers and fashion magazines to work together with the club program previously outlined.

This, of course, requires a little more effort. However, the time seems to be right for such a step. In a beautifully color illustrated article LIFE hailed the long overdue "Return of Elegance." The "austere . . . sparsely furnished stark interior is old hat . . . (there is) a return of elegance and a lavish look for U.S. homes . . . antiques and modern furniture are teamed . . . heresay yesterday, good taste today" (Life, Oct. 14, 1957).

We can keep this trend towards wood alive by showing the architects, designers, and other fashion dictators what the lumber industry has to offer in the line of basic materials. They know, respect and love our pecky cypress, wormy chestnut, and knotty pine. It is time that we demonstrate, unveil and display our sappy oak, gummy cherry, and minerally maple.

It is all a matter of education and constant plugging. Women can and are eager to learn, if someone will only take the trouble and teach them. After all, women have unanimously accepted the doctrine that, although they look like glass "Diamonds are a Girl's Best Friend." It should, therefore, not be too difficult to convince the women that "Wood is Wunderbar."

WHAT DO YOU THINK?

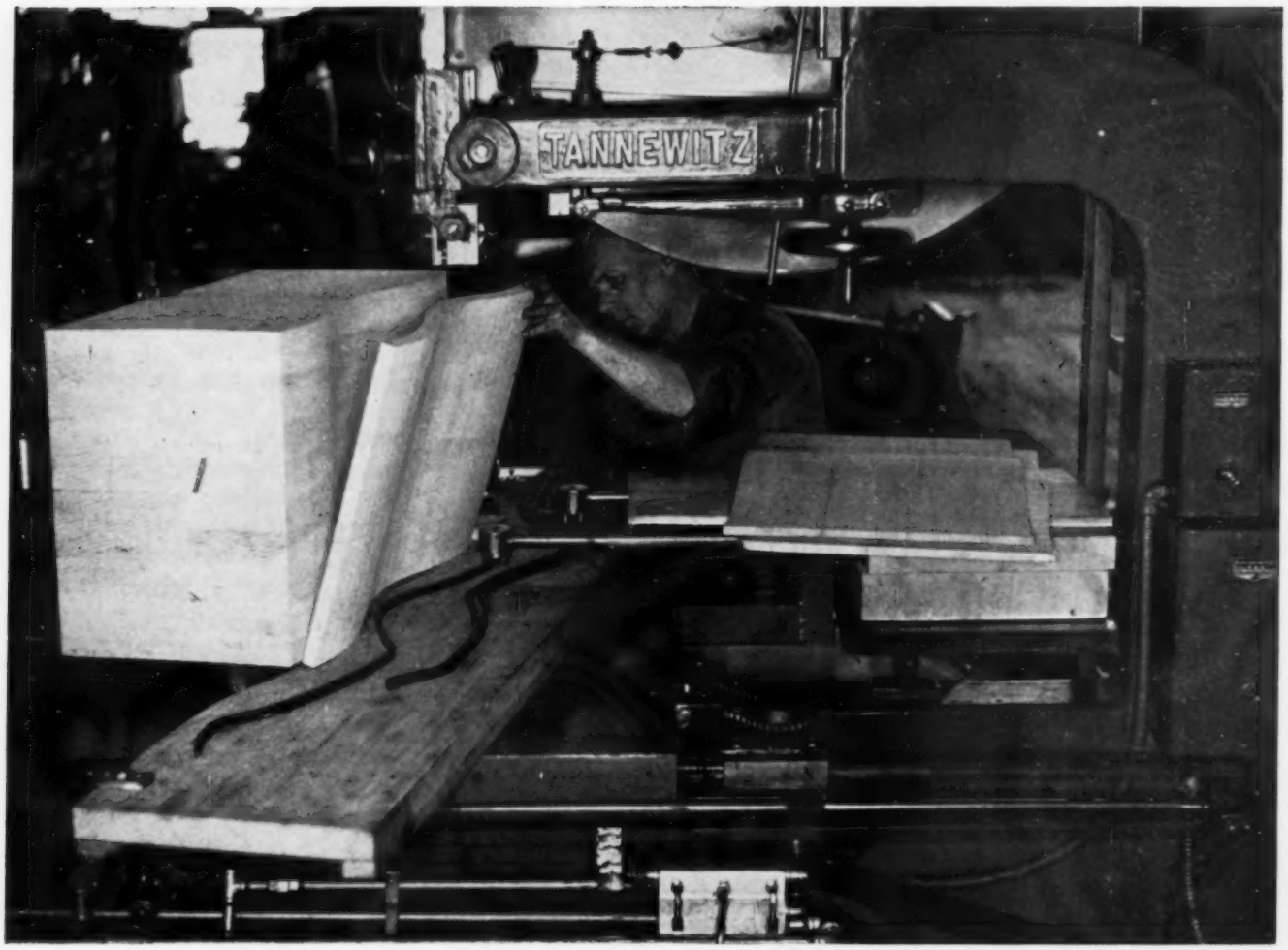
Does this suggested program for Mrs. America make sense? Is it feasible? Would you be willing to arrange such plant tours? We are interested in your reaction. Write to us, if you please.

—The Editor.

TANNEWITZ

AUTOMATIC SERPENTINE-CUTTING HIGH SPEED

BAND SAW



Tremendously faster, far smoother and with greater uniformity than ever before this specially developed TANNEWITZ high speed band saw cuts serpentine fronts automatically. In the field of standard band saws there's one that stands out head and shoulders above all the rest . . . THE TANNEWITZ HIGH SPEED BAND SAW . . . built by sawing machine specialists to give you much greater production, cleaner, smoother cuts that reduce following operations, freedom from damaging saw-blade breakage and a lifetime of perfect service. Write for "Bulletin GH" and see for yourself the many exclusive features that make these machines the most productive in the band saw field and by far the cheapest in the long run. Sizes to suit all production set-ups . . . for both wood and metal cutting.

THE TANNEWITZ WORKS

GL 6-1729
GRAND RAPIDS 2, MICHIGAN

How Does Steel Strapping Cut Costs?

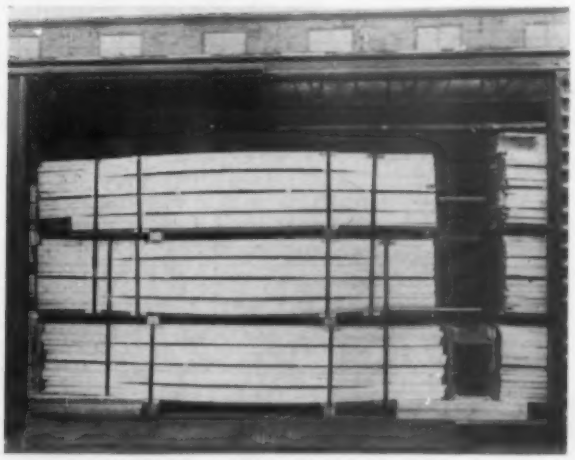
By dumping steel strapped bundles of logs, many loggers have doubled the storage capacity of their ponds and eliminated sinkers.

Above: Acme strapping is used to unitize sheets of plywood. In car loading for shipment, packages are tiered and the lading secured with Acme Unit-Load band. Users report that customers are happy with the new system since it allows them to use their mechanical equipment to unload. A load can be made ready for shipment in 25% less time with the steel strapping than with bulkheading.

Below: In the "interlace securement" method of packaging lumber, the individual packages are prepared the same as in the "chain-tie" method. Then two bands are placed through the centers of the top and bottom packages and tensioned.

Above: A wood preserving firm reduces handling costs by unitizing railroad cross ties to allow mechanical handling throughout the treating process. A fork lift truck easily and safely stacks bundles of finished cross ties four high, thus better utilizing yard storage area.

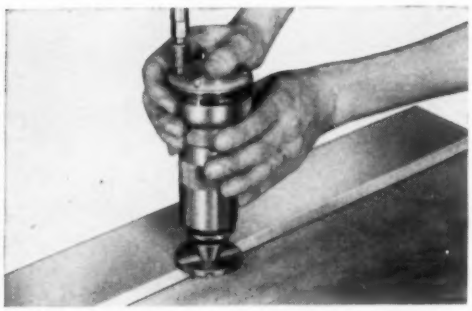
Above: Quality flooring is bundled 10 planks to a package with Acme Steel F1 strapping machine. Strap is fed around the package, tightened to a predetermined tension, sealed and cut by "push-buttons." Twenty-five bundles, like the one shown, will later be unitized for easy storage and shipment.



Above: Lumber is secured in a box car with the "chain-tie" method of steel strapping. Each of the three packages is strapped with two bands. Two bands are then tensioned around the bottom and middle packages. Two bands are also placed around the top and middle packages.

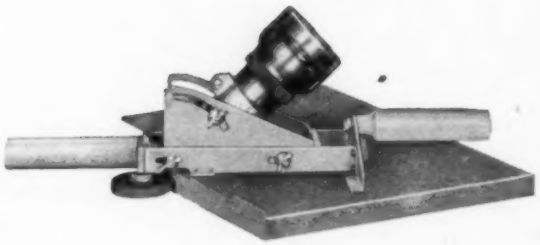
4 BASIC TOOLS TO SAVE YOU MONEY IN WOODWORKING

ONSRUD AIR TURBINE PORTABLE ROUTERS



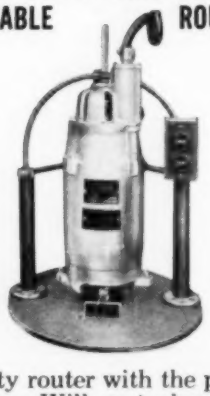
Have you seen Onsrud's complete choice of air turbine portable routers? Built in capacities from ¼ to 2 HP. Fixtures let you cut accurate straight lines, curves and circles in trimming, mortising and decorative insetting. Precision built for dependable power under load for every type of wood.

ONSRUD W-218 AIR TURBINE BEVELING TOOL



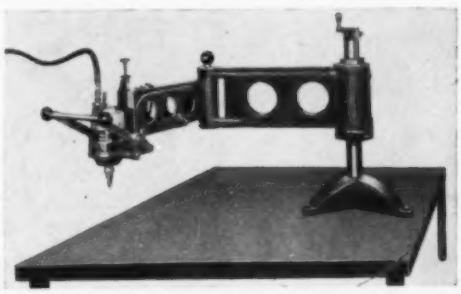
For trimming and beveling table and counter tops after lamination of plastic or wood finish sections. Accurately trims and bevels plastic or wood veneers. Cuts any bevel from 30° to 90°. Powered by 50,000 RPM, governor controlled ¾ HP Onsrud air turbine motor.

ONSRUD W-215 SPECIAL HEAVY DUTY PORTABLE ROUTER



A heavy duty router with the power of a large machine. Will rout plywood up to 1½" thick and heavy gauge plastic and aluminum. Designed for overhead spring suspension. Built with 5 HP high cycle electric motor. A heavy duty portable unit for relieving the work load on larger machines.

ONSRUD W-106A RADIAL ARM BENCH ROUTERS



Radial arm permits routing over work table in a radius of 44" from center of column. Provides high speed, accurate routing of all types of wood, plastic and laminated flat parts. A low cost machine for mounting to 4'x8' work table. Supplied in choice of ¾, 1 and 2 HP air turbine router heads. Vertically adjustable for easy set-up.

FOR COMPLETE INFORMATION write for the Onsrud Portable Router Bulletin, No. 1138-B. Your inquiry is cordially invited.

Onsrud®

ONSRUD MACHINE WORKS, INC.
Portable Tool Division
3947 Palmer Street • Chicago 47, Illinois

ARE WE PROMOTING ARCHITECTURAL WOODWORK?

• *Order Lumber Advantageously*
• *Use Good Machining Practices*
• *What Finish Should Be Used?*
• *Selling the Products*

By John Reno
Utilization Director, The Pacific Lumber Co.

▼ Probably the first step in conducting a successful woodwork manufacturing concern is to buy lumber advantageously and correctly. This does not necessarily mean to buy lumber at cheap prices, but to buy suitable lumber at the right price.

First, is the purchase order written correctly?

Use Grading Rule Books

A common mistake made by lumber buyers is the use of grade names like "A Number 1," "Number 1 best," "AA," etc., which have no legal meaning, since there are no such grades in the lumber associations' grading rule booklets. Don't make up grade names. It saves time and procurement headaches to specify the grade as listed in the grading rules for the particular species of wood.

When buying standard grades, include the provision, "This lumber to be graded in accordance with the rules and regulations of.....," and insert the name of the association that writes the rules for the species you are buying. For instance, the California Redwood Association for redwood: the West Coast Bureau of Lumber Grades and Inspection for Douglas fir, etc. If lumber bought under this provision does not appear to be up to grade, you can demand association reinspection; and if you are right in your complaint, you can get satisfaction.

Also, lumber buyers should know that nominal lumber sizes such as 1x6, 2x4, etc., are merely name sizes in most species. A 2x4 may have been 2" x 4" or more when first sawed green, but it soon begins to shrink and generally has lost size in both dimensions before arriving at destination. However, it still is sold as a 2x4. If full nominal size dimensions must be had at time of utilization for some unusual reason, a special cutting at usually exorbitant cost must be made. Grading rule books show guaranteed thicknesses and widths of all nominal sizes on both rough and surfaced lumber. The use of standard sizes as listed in the rule books will save much money.

Mr. Reno spoke on the subject of promoting architectural woodwork at the annual fall meeting of the Architectural Woodwork Institute. With his permission, we are summarizing his speech. Much of his basic thinking can be applied to the promotion of all wood products. Making a quality wood product and merchandising it properly is good advice for the entire woodworking industry.

Sometimes a lumber buyer can get hold of a hungry lumber manufacturer and persuade him to furnish lumber which is oversize in thickness or width. Any lumber buyer who lets himself get started buying oversizes on thickness and width is just storing up trouble for himself, and for his company, if these oversizes are adopted as standard for items being produced. Seldom will the big sawmill sell oversized lumber. It is usually the mill that has trouble selling its lumber at all that grasps at this oversized business.

Once the buyer gets started with a mill like this and establishes the oversized dimensions as standard with the buyer's company, he puts himself at that mill's mercy. If a seller's market develops, the mill is in position to write its own ticket, as nobody else will touch this type of business. Start out with standard thicknesses and widths or get to them as quickly as possible, and your procurement problems will diminish. This applies to lumber for doors, windows, louvres, etc., as well as to other wood items that go into millwork.

When deciding on profiles for moldings and pattern items, try to find a standard pattern, as shown in the established pattern books. If you must have moldings or patterns run to your special order, be

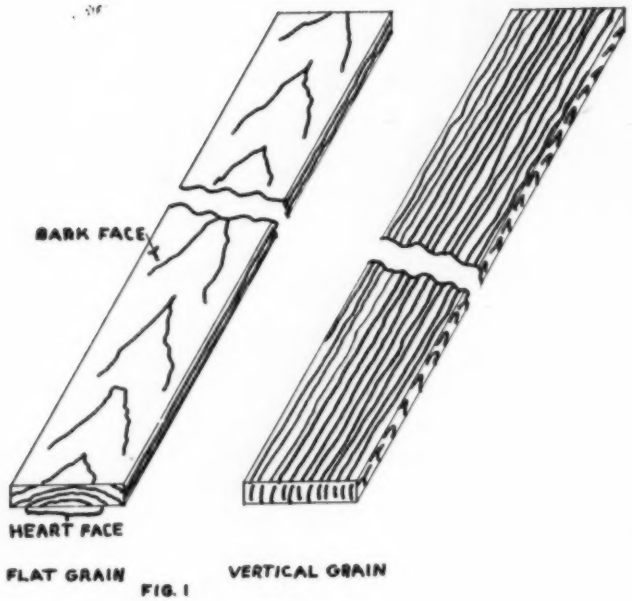


FIG. 1

sure you design them with standard thicknesses and widths.

Some purchasing agents buy long length lumber regardless of the short lengths to which it is to be cut when being utilized. Sometimes this is because the purchasing agent does not know the end use of the lumber. Other times it is because of storage problems or in still other cases, the mill foreman insists on the long length stock.

Considering the usually much lower cost of shorts, it generally would profit the woodwork manufacturer greatly if shorts were bought when suitable and available.

Points to Remember

Moisture Content. Always specify a moisture content on your orders. (Consult "Wood Handbook" of the Forest Products Laboratory for recommended M.C. figures.) Then demand that your supplier sell you lumber on these specifications. Doing so will keep you and your customers out of trouble due to the use of lumber of the wrong moisture content.

Always specify a range of moisture content; for instance, 9-14%—never specify an average moisture content alone, as this gives you very little protection, legal or otherwise. Do not bother to specify kiln dried or air dried—just give the range and average of moisture content.

Price. Naturally, a good buyer wants to buy at as low a price as possible, everything else being equal. When price is to be the governing factor, it is important that everything else be equal and that the lumber specification be clearly written so that each lumber salesman will know exactly on what he is quoting so that he can price his stock accordingly. This helps both buyer and seller.

Straight Grain. To help eliminate lengthwise shrinkage, warping, and roughening of the surface and to greatly improve the painting and surface finishing properties of woodwork products, tell your sawmills and planing mills they are to furnish these products in lumber that is straight grain lengthwise.

Sap Stain. Where the matter is of importance, ask your lumber supplier for stock that is bright without sap stain on arrival. Remember though that sap stain has no really bad effect on lumber except in its appearance.

Quarter-Sawn Lumber. The term, quarter-sawn, applied to hardwoods is the same as vertical grain and edge grain in softwoods while plain-sawn applied to hardwoods is the same as flat grain or slash grain in softwoods.

If you are not already thoroughly familiar with the advantages and disadvantages of quarter-sawn or vertical grain versus plain-sawn or flat grain lumber in your business, you should become so promptly. Briefly, quarter-sawn machines and stays the smoothest with less warp and weathering. It takes paints and finishes best, and there is no grain loosening or lifting on the faces. It shrinks less in width and weathers the best. Figure 1 illustrates vertical grain.

Plain-Sawn Lumber and Good Machining Practices

Because quarter-sawn is not always available and for other reasons, flat grain is often used in architectural woodwork. One can do a good job or a very bad one with flat grain lumber, depending on the knowledge of how to use it to best advantage and then willingness to go to the trouble of using it properly.

Practically all of the complaints about plain-sawn or flat grain lumber are due to troubles that develop on the "heart side" of the board. Looking at the growth rings on the end of a flat grain board, the face which is toward the concave part of the growth ring pattern is called the "heart face." Surface roughening, grain raising, grain loosening, and lifting, when they occur, are invariably on this face.

This means that any machining of parts done by you or done by others for you should be done with the pattern being run on the other face which is known as the "bark side." This is the face toward the convex portion of the growth ring as seen on the end of the board. This bark face machines and stays smoother, it takes paints and finishes better and there is practically no grain loosening on this face.

Actually there is as much difference between the "heart" and "bark" faces of a plain sawn or flat grain piece as between night and day, and the architectural woodworker seeking perfection will recognize this fact and act accordingly. When using flat grain always make the bark face the exposed face of your work. (See Fig. 1.)

Also in the interest of better workmanship, wherever possible, ease all edges and make interior and exterior angles curved rather than square cut. When grain loosening and splintering occur on lumber, it is caused by incorrect machining!

In addition to specifications that take into full account the inherent qualities of wood, there are other practical requirements that may be added to en-

hance the appearance and the service of the finished product.

Treating Lumber. Treatment with a good water repellent will add dimensional stability and reduce shrinking and swelling defects. Ordinary paint has very little beneficial effect in preventing swelling or shrinkage.

Decay. The lowest piece of exterior woodwork should be at least 6″ above the ground. When woodwork is to be placed in locations where it will get damp or wet, use preservatively treated wood, or the naturally durable heartwood of redwood, cedar, tidewater red cypress, walnut or true mahogany. Painting wood does not protect against decay! Do not paint green lumber as doing so can cause decay. Decayed lumber may be dry when observed, but when the decay occurred the moisture content of the wood was above 20%. Under dry conditions, sapwood and heartwood are equally strong.

Laminated Lumber. Use laminated beams for rustic effects. Sizes are available in laminated beams which are not easily obtained in solid lumber—sizes such as 4″ x 8″, 6″ x 10″, etc. Laminated beams are built up from kiln dried, 1″ lumber and produce timbers that are better than solid pieces, yet have every appearance of solid lumber without the latter's defects. Some firms may wish to consider setting up lamination operations of their own.

Fastenings. Use aluminum or hot dipped galvanized nails or other non-corroding fastenings when applying exterior woodwork, especially if the woodwork is redwood, oak, or cedar and even if the nails are to be set and puttied. Lumber should be fastened in such a way as to have as much freedom as possible to move in response to moisture changes. Do not tie down a wide board by nailing it at each edge. When heavy loads are to be carried by wood screws, lead holes should be prebored.

Termites. The booklet, "Exposing the Termite," published by the National Lumber Manufacturers Association, has some good advice. Best economical protection is a good, metal termite shield. Soil poisoning is another measure.

Crawl Spaces. If you furnish woodwork which is placed in buildings where it might be affected adversely by moisture rising from crawl space, protect your products! Insist that a good vapor barrier soil cover be laid over the ground.

Finishes—Exterior and Interior

If using natural finishes on exteriors, get a list of natural finishes that have been tested and found satisfactory. Lists are available from: Forest Products Laboratory, Small Homes Council of the University of Illinois, the California Redwood Association, and the Pacific Lumber Company. However, only the Pacific Lumber Company and the California Redwood Association can provide actual trade names.

There are about 25 natural finishes which have stood up well. Failure of natural finish observed in many housing developments may be traced to use of finishes other than those recommended by unbiased authorities.

In addition to the exterior finishes that are suitable for interior purposes, there are a multitude of products made for interior use. Two coats of a good liquid wax are about as good as anything as an interior finish.

Windows Can Be Sold

Real progress in the combination storm and sash industry will be realized when someone makes a wood unit that is neat, compact and completely self-storing! Only when self-storing wood combination storm and screen sash is available will we reverse the present preference for aluminum.

Why, in most windows, do the makers let the sill into the side jambs while the most sturdy and long lasting construction would be to let the jambs into the sill and top rail? Also, there are good reasons to let the stiles into the rails instead of *vice versa.*

The greatest weapon the metal window people have against the wood window is the contention that paint maintenance is necessary. Can we prove them to be wrong? It should not be necessary to paint wood windows or ever refinish them after they have been put in a building. A wood window can be made that will last as long as any building in which it is installed.

Why don't we investigate to determine if a properly made and treated wood window can be installed in office and apartment buildings on the second floor or higher and, without further attention, maintain an appearance comparable to metal units in the same use? There's big window business for manufacturers in office, apartment, school and church jobs.

I suggest that separate vertical grain and flat grain units (with the bark side out on the latter) be built of so-called non-durable woods and when finished, including weather-stripping, be preservatively treated. The treating product should be toxic and contain water repellents in much greater amounts than those present in current non-swelling paintable solutions. Treatment could be clear or contain a good weathering stain.

In addition, make similar units of the heartwood of vertical grain and flat grain from naturally durable woods such as redwood and western red cedar. Some should be left untreated and others dipped into the same treating solutions as mentioned above. A sufficient number of these test windows should be placed at heights equal to the second floor and on up to the tenth floor of a building with exposure on both north and south walls.

Such a program might give us pleasantly surprising results. We know we can build windows that will not decay, and I have confidence we can develop finishes that will require no maintenance and will give us satisfactory appearance.

Wood Schools Are Better

Actual bids on identical plans, except for materials of construction, show wood frame, one-story

school buildings cost less than steel frame. Objections to using wood in schools are raised by two classes of people: (1) The sincere citizen who honestly believes that wood schools are a fire hazard, and that maintenance may be costly. (2) The second is a competitor who is trying to sell other construction materials.

The fire insurance loss on a wood school may be greater, but there is very little likelihood that there is any more danger in loss of life. Loss of life is usually due to fumes, smoke, flames, etc. Furthermore, the lower cost of building the wood school more than compensates for the high insurance premium.

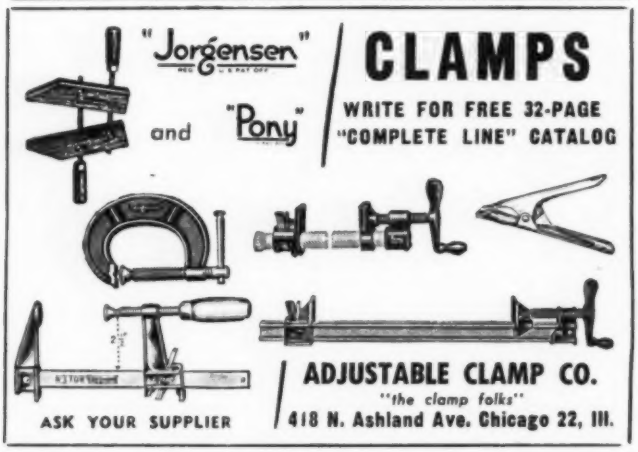
Does fire spread through the walls of buildings? No, the spread of fire between adjacent buildings is not from wall to wall, but when the window glass of the second building is broken, the contents catch fire.

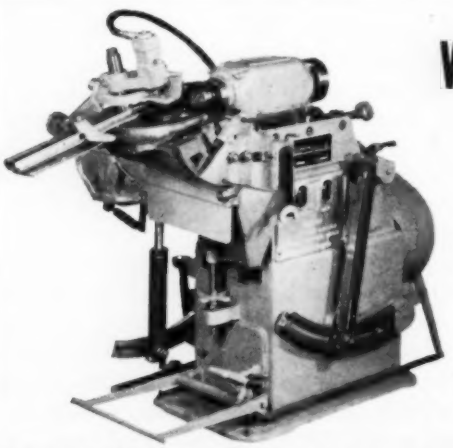
Selling the Products

Advertising ought to detail the superiority of a product! Learn the details of your product's superiority and the details of the inferiority of your competitor's product. Then learn how to convince others of these facts.

Do you remember the 19-story apartment house job in Chicago where the bid on wood windows was about $100,000 lower than the original bid on steel windows? However, the steel people reduced their quotation to get under the wood bid. Lowering a price this much must have hurt somebody! Maybe the move was meant to permanently stop bids from wood window manufacturers. However, if we persist and are able to submit bids on many such jobs, the steel people will have to give up some of the jobs which they may now be taking at prices below cost.

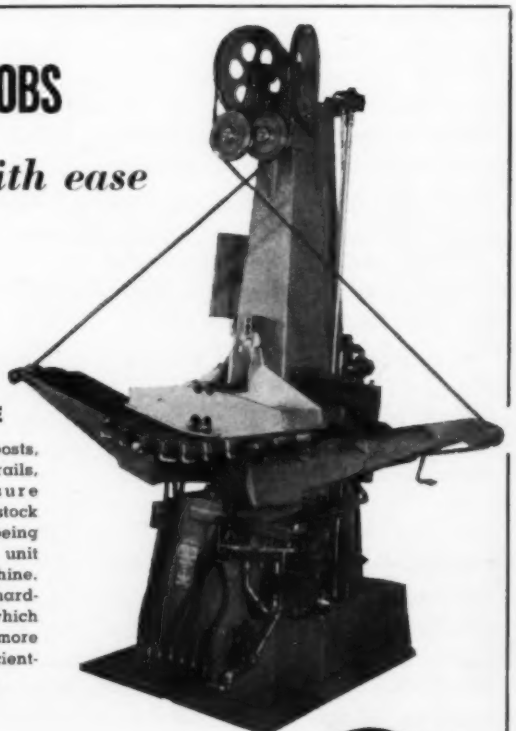
In summary, remember that good architectural woodwork promotion begins with the purchase of the best lumber; machining the lumber in a manner to get the greatest benefit from its natural properties; treating the lumber to enhance these properties; fabricating it in a manner to give perfect results; *and then telling the world what your product is guaranteed to do!*





WOOD WORKING JOBS

...handled with ease



The new RICHARDSON Type "LB" Single End, angular trimming, chucking, or boring machine.

Compound angular setups made in less than one (1) minute including the running of the test piece, are possible on the "LB." Feed rates up to 30 pieces per minute. Scales throughout on every conceivable movement increase both speed and accuracy of setup.

The flexibility of the "LB" Machine make it the world's biggest value in the angular chucking and boring field.

HYDRAULIC UNIVERSAL BENDING MACHINE

For bending chair posts, seat rails, table rails, etc. Slide pressure clamps for holding stock straight while being bent. Hydraulic unit built in base of machine. Here is another Richardson-built machine which will do your jobs more effectively and efficiently. Write for details.

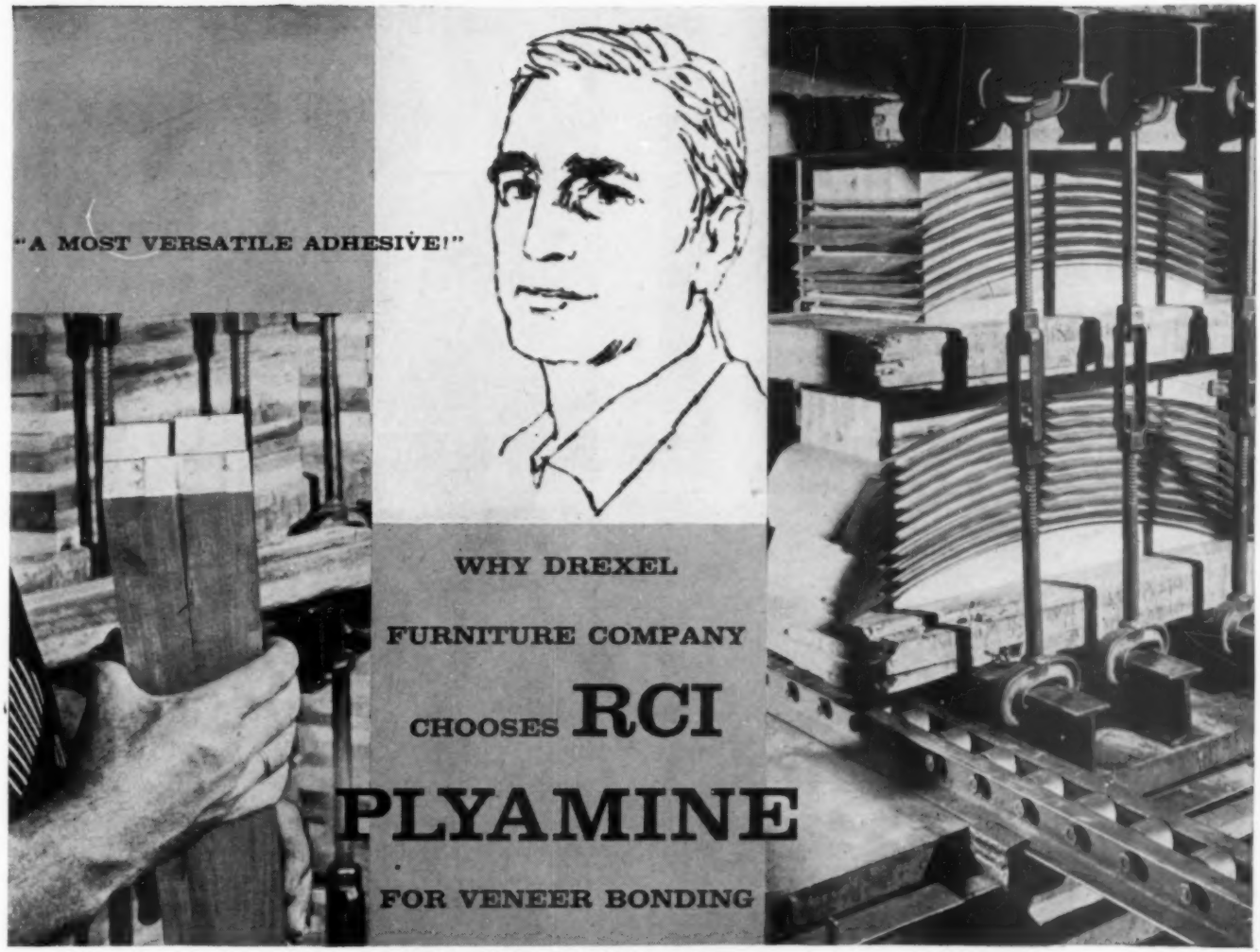
J. S. RICHARDSON Company

Manufacturers of

PRECISION · HIGH PRODUCTION WOOD WORKING EQUIPMENT

Telephone HOward 7-4655

Sheboygan Falls, Wisconsin



AND CORE BUILDING

"RCI PLYAMINE does a great variety of jobs for us . . . and does them all equally well." Speaking is Mr. Edwin P. Bounous, chief engineer of Drexel Furniture Company, in Drexel, North Carolina.

This versatility of PLYAMINE – a urea-formaldehyde resin adhesive that can be used with various catalysts to suit *specific* needs and to achieve *exact* results – makes it extra useful for furniture manufacturing applications. Drexel Furniture Company discovered this four years ago, and has been an enthusiastic PLYAMINE user ever since.

Thus, the same basic adhesive can be applied successfully to edge-glue lumber for cores in veneer work, to bond crossbands and veneer to the cores, to form posts which are turned down into legs, and to join doweled or splined joints.

PLYAMINE meets all the rigid specifications of the commercial standards set up by the U. S. Government. It offers high water-proof qualities and superior resistance to mold and fungi . . . *plus* the outstanding RCI quality control that assures complete uniformity from shipment to shipment.

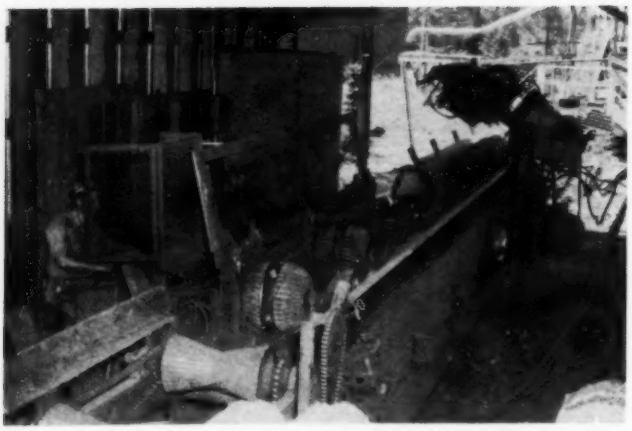
Will PLYAMINE do a *better* job for *you?* Your RCI salesman will be glad to provide you with full information and any technical aid you need. Look to Reichhold, too, for fast service. RCI plants across the country can supply any firm quickly by rail tank car or highway tank wagon.

Creative Chemistry . . .
Your Partner in Progress

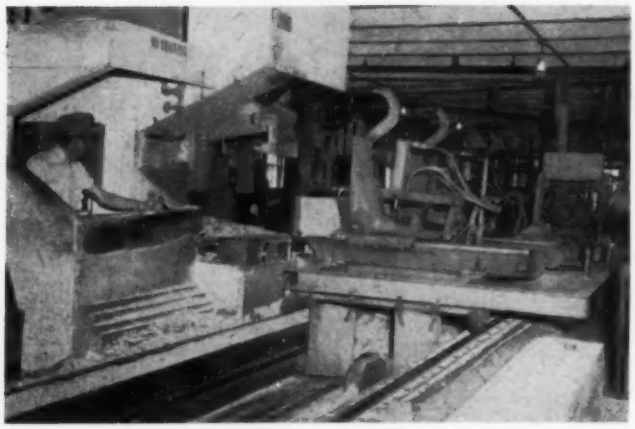
RCI

REICHHOLD

Synthetic Resins • Chemical Colors • Industrial Adhesives • Phenol
Formaldehyde • Glycerine • Phthalic Anhydride • Maleic Anhydride • Sebacic Acid
Sodium Sulfite • Pentaerythritol • Pentachlorophenol • Sulfuric Acid
REICHHOLD CHEMICALS, INC., RCI BUILDING, WHITE PLAINS, N. Y.



Logs from the woodyard are put through the Soderhamn debarker before entering the mill. Debarking logs before sawing has enabled Ramsey to ship 75 cords of profitable chips each week.

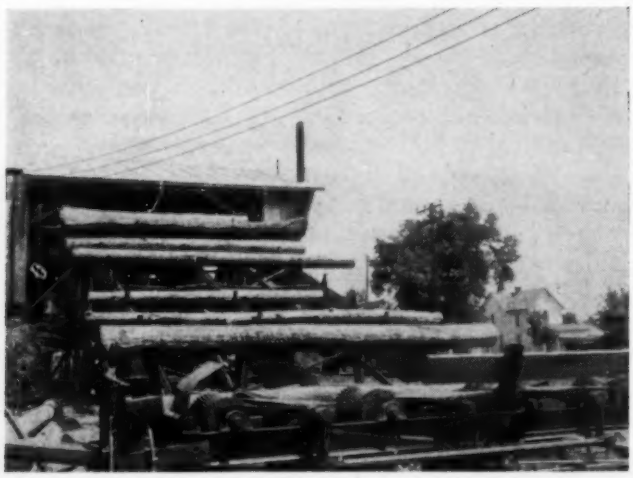


The sawyer controls dogging, undogging, setting out, tapering and all other operations on the Mater 42" riderless carriage. This carriage is used with a 6' band mill and a steam feed.

IS SAWMILL AUTOMATION

Ramsey Lumber Company finds automation is profitable because:

- **Production is doubled.**
- **Operating costs cut.**
- **Quality of lumber improved.**
- **Waste wood made into salable products.**



Debarked logs move up the Montague haul-up to the mill.

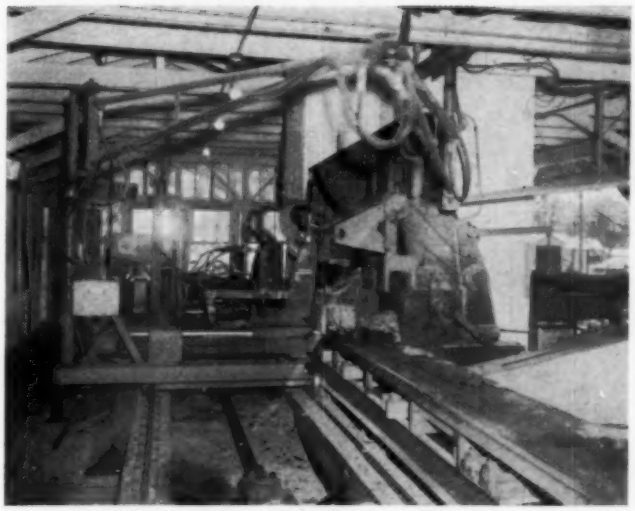
▼Production doubled, operating costs cut, lumber quality improved, waste wood turned into profit dollars! It sounds like any mill operator's wishful thinking. But it's not just wishful thinking. It's what happened to Ramsey Lumber Company at Suffolk, Virginia, last year, when President J. C. Ramsey, Jr. and Sec.-Treas. Henry Pinner decided to invest in sawmill automation and waste utilization. What happened to the Ramsey sawmill is important news because it's typical of what has happened to many other progressive mills—the mills that are staying in business no matter how tough the lumber market. These mills throughout the entire country have taken the path of sawmill automation.

Last year Ramsey was producing about 60,000 bd. ft. a week, with a 13 man crew. The new automated Ramsey mill produces 125,000 bd. ft. a week—more than double the original cut—with a total crew of only 11 men. But Ramsey's laurels don't rest on these remarkable changes alone. The new setup also has a debarker and chipper which enables Ramsey to sell about 75 cords of chips a week of what was formerly waste wood to the Camp Manufacturing Company at Franklin, Virginia.

How has Ramsey been able to achieve these remarkable production figures? By automation and wood waste utilization.

Maximum Use of Minimum Man Power

Ramsey Lumber Company is a sawmill with only three men on the mill floor. In building his new mill Ramsey followed closely the basic principle of sawmill automation: use only one man per machine. The three men on the mill floor are all there only because



An overhead Mater pantograph brings air and electricity to the carriage.

The Montague edger tailing device eliminates the need for an edger tailer. It automatically separates the edgings from the boards.

PROFITABLE?

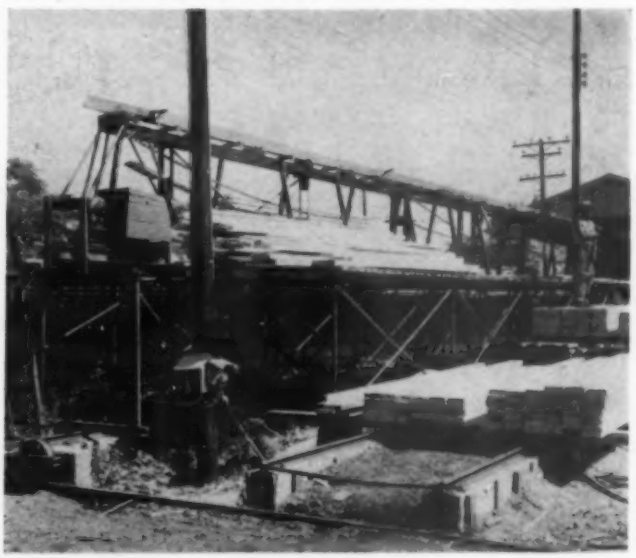
they are making decisions, something which no machine can do. Lumber handling, waste disposal, and other purely mechanical operations are left to automatic tranfers and conveyors.

Stars of the Ramsey show are the sawyer, who handles log turning, dogging, undogging, setting out, tapering and all other carriage operations; the edgerman, who handles all transfers to and from the edger as well as the edging operation itself; and the trimmerman, who trims and sends the lumber onto the green chain. To convert slabs and edgings into a chip gold mine, logs are debarked before sawing and the debarker man is the fourth man of the mill crew, though he is not part of the sawing operation.

Quality is a must for the board and dimension lumber Ramsey turns out from his pine (about 80% of the cut) and cypress logs. The new Ramsey automated mill has improved quality even while producing twice as much lumber with fewer men. In fact, the new riderless carriage, operated entirely by the sawyer, has eliminated at least 95% of the miscuts.

Logs are turned into valuable lumber, with a lucrative chip by-product, in a clean production line. From the wood yard a fork-lift loads stored logs on an automatic log haul which maintains a constant supply of logs to the debarker. One debarker operator handles the entire operation through the Soderhamn debarker. Debarked logs are transferred to a Montague log conveyor and Montague log deck with a stop and loader. When the mill was first constructed, the debarker man also pushed buttons to control the log flow to the log stop and loader. Later, however, Mater Machine Works, Inc., Corvallis, Ore., engineered the automation of the log deck.

Mater off-bearer conveyor next to the saw eliminates the need for a man on the off-bear side. The conveyor is tied in with the live rolls and is easily removed for clean up.



Trimmed lumber is run through the slot-roll sorter and stacked for kiln drying.

Automation has been defined by a sawmill automation expert as the "use of machines to control other machines." Pushing buttons to start and stop the original log haul and log deck was only an advanced state of sawmill *mechanization*: Machines were doing the work formerly requiring men. This system still required the time and attention of the debarker man.

By installing limit switches the log haul and deck now run "by themselves" keeping the log deck full at all times. This automated the deck and relieved the debarker man of the necessity for keeping an eye on the log supply. The automation design also features safety switches which prevents piling up the logs through over-running the chains.

From the automated log deck, logs are sent to another special feature of the mill, a riderless log carriage, manufactured by the Mater Machine Works, Inc. The sawyer, J. W. Jarvis, controls all the operations on the carriage. By pushing a button on the control stick, he dogs the log or cant with the Mater non-defacing "swivel" type air tong dogs. Pushing the same button again undogs the log or cant. Another button on the stick oscillates the Mater dogs full out to 3¾" to dog logs. When he needs to dog small cants the sawyer presses the same button again to pull the dogs in to ¾" from the knees. Another button on the control stick controls the hook dog.

To set out the thickness he wants, the sawyer presses a button on the control panel mounted in front of him and the knees automatically set out a pre-determined distance. The Ramsey carriage has a four push button setworks. A Mater clock-face dial is mounted on the carriage in clear sight of the sawyer. Two toggle switches in front of him control the Mater taper clutch which is installed in the setshaft of the carriage. The sawyer can move the taper knees forward or backwards any distance he needs to get the best quality out of a taper log. A Mater pantograph carries the air and electricity from the mill floor to the carriage. The electric cables on the pantograph are fitted at the ends with quick-connect amphenol fittings so that in case of wire breakage the wires can be connected instantly by plugging in the amphenol ends.

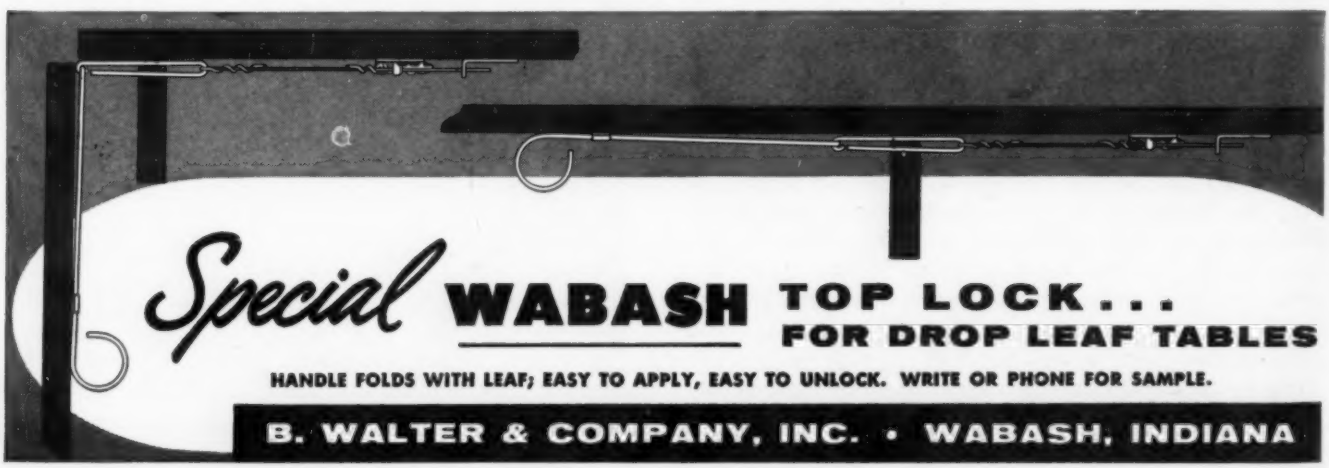
Another feature of the Ramsey mill is the Mater off-bearer conveyor which was built next to the 6' bandsaw after the mill was constructed and running. The automatic off-bearer removes the need for an off-bearer man. The flat plate which is usually found on the bandsaw husk was replaced by a moving leather belt which takes boards and slabs. The entire automatic off-bearer is removable as a unit without disturbing the belt tension, for adjusting the saw guide and cleaning around the saw. The automatic off-bearer gave Ramsey all the advantages of automatic off-bearing with comparatively little expense.

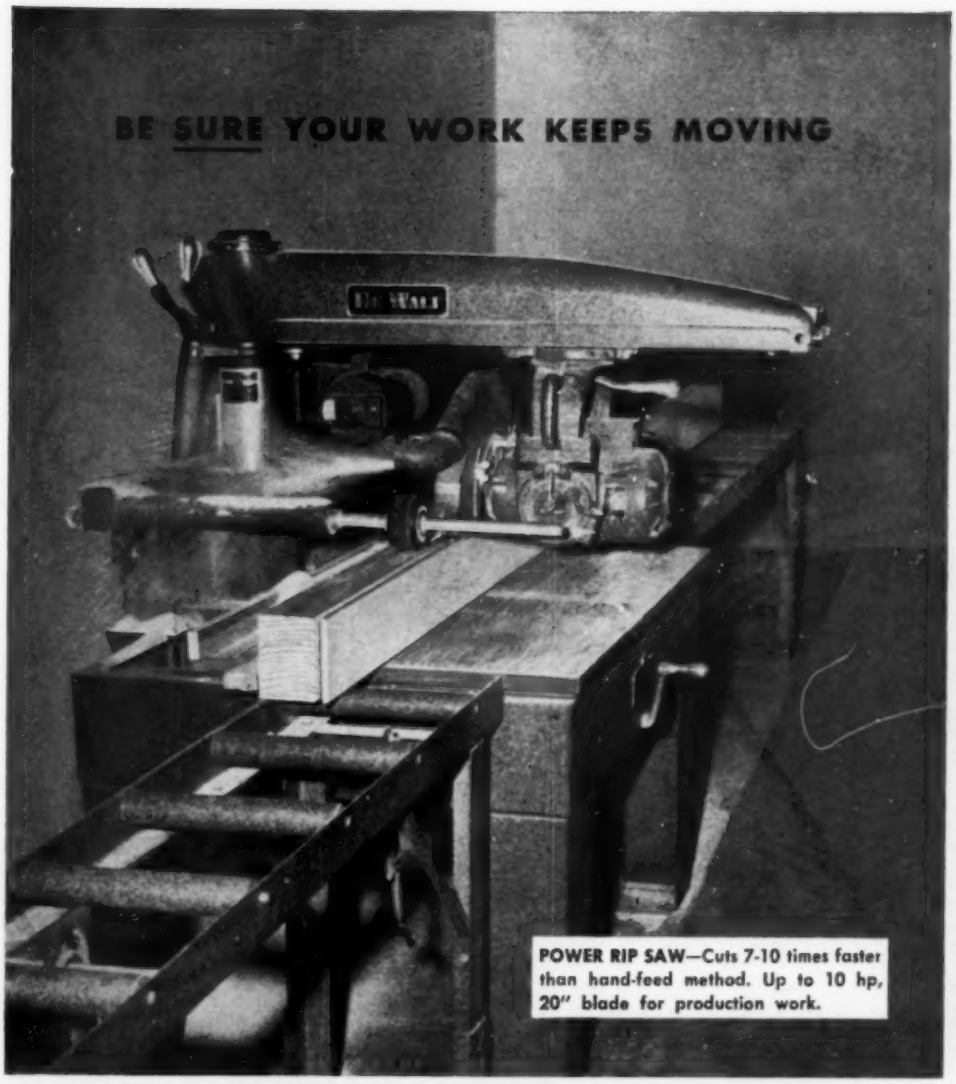
Montague live rolls carry lumber, rind boards and scrap to a set of Montague flippers which flip the rind boards to the edger transfer to the Wheland edger. Another automatic feature of the mill is the Montague edger tailing device which eliminates the need for an edger tailer. The edger tailing device automatically separates boards from edgings. The edgings are carried out to the chipper, while the boards are carried over roof top chains to the double end trimmer. Lumber from the carriage which is ready for trimming also is sent onto the trimmer infeed.

A feature of Ramsey's mill layout is the efficient B. L. Montague conveyor and transfer system which eliminates manual handling of the logs or lumber and routes all wood waste to the chipper and chip bin or to the boiler for steam power to drive the carriage and log turner.

The Ramsey statistics are impressive. Automation has not only doubled Ramsey's production, eliminated 95% miscuts, and improved quality, but it saves $4000 a year in labor costs over the old type mill. The wood waste utilization program nets another $1200 or more a week from the sale of chips. Ramsey has also calculated that the new equipment will pay out in less than three years.

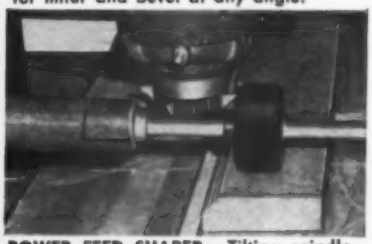
In this era when many operators are closing their mills because they "can't make a cent what with high labor costs and high stumpage costs," the story of the Ramsey Lumber Company shows that running a sawmill can be turned into a profitable business. But that transformation isn't made merely by investing in new equipment. The investment must be in automation, in the layout and machines especially designed for mill automation, and in full log utilization. Automation and utilization are the keys to profitable sawmills.


Special WABASH TOP LOCK...
FOR DROP LEAF TABLES
HANDLE FOLDS WITH LEAF; EASY TO APPLY, EASY TO UNLOCK. WRITE OR PHONE FOR SAMPLE.
B. WALTER & COMPANY, INC. • WABASH, INDIANA



POWER RIP SAW—Cuts 7-10 times faster than hand-feed method. Up to 10 hp, 20" blade for production work.

AUTOMATIC CUT-OFF SAW—Arm swings for miter and bevel at any angle.



POWER FEED SHAPER—Tilting spindle feature cuts 50% more shapes per cutter.

POWER FEED DADO MACHINE—Top-side cutting to any depth or width desired.

POWER FEED FOR ALL CUTTING OPERATIONS

DE WALT HANDLES ANY PRODUCTION-LINE OPERATION

Here are the BIG REASONS why modern, precision-built De Walt® machines with new POWER FEEDS and PRODUCTION JOB FLEXIBILITY belong on your cutting line and in your specialty departments:

ONE-MINUTE TOOL CHANGE SAVES 60% OR MORE IN MACHINERY COSTS—Any De Walt can be changed over from ONE machine to another within ONE MINUTE and start producing. Gives you a cut-off saw, miter saw, rip saw, dado machine, shaper, etc., to fit your job. Radial arm design means unlimited work opportunities. ONE De Walt does the work, saves the space and cost of many single-purpose machines. See how many idle single-purpose machines now in your plant can be replaced with ONE De Walt . . . chances are their used machine price will pay for your De Walt; put extra money in your pocket.

A DE WALT LINE GIVES YOU ANY COMBINATION YOU NEED—A battery of De Walts on your line saves set-up time for seasonal or pattern changes. No need to buy more machines or to move them around . . . just change the tool on the De Walt spindle and you have the machine you want at the right spot. For example, 5 De Walts give you 5 cut-off saws, 5 rip saws, 5 dado machines, 5 shapers or any combination you need. Power feeds on each turn out 7 to 10 times more work than manual operation.

In addition, De Walt releases expensive floor space for other uses and gives you these other advantages: De Walts are always busy . . . keeps material moving through your shop efficiently in a straight line—operators like to handle the safer De Walt. It's your best long-range investment!

DE WALT PAYS FOR ITSELF AS A SPARE—Thousands of shops use De Walt as an all-purpose spare . . . fits into the line instantly should any machine break down. Protects you against expensive down-time or loss of production. Equip your specialty department with a De Walt, give your workers full flexibility that eliminates loss of time while they wait for their turn to make a cut on the production line equipment.

De Walt can be the most important machine in your shop . . . TRY IT!

Send the coupon below today for the full profit-saving, profit-making facts.

Another AMF Product

DE WALT POWER TOOLS

FIRST since 1922

De Walt Inc., Dept. WD-712, Lancaster, Pa. Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY

☐ Please send valuable Free Booklet—"De Walt Job-Tested Cutting Methods"

☐ Please arrange to show your 16 mm Sound Film to us.

Name_____

Company_____

Address_____

City_____ Zone____ State_____

Take a turn to new profits with LINCK TANDEM GANGSAWS

With two Linck Gangsaws, arranged in tandem, you recover the greatest amount of quality lumber with the fewest possible workmen. That spells profit — even with today's high rates for timber and labor.

The Secret Is The Exclusive AUTOMATIC SAW WIDTH ADJUSTMENT

When Linck developed the Automatic Saw Width Adjustment, the need for extensive log sorting was eliminated and tandems became practical. Now the sawyer by remote control can instantly shift clusters of saws to produce cants of desired thicknesses. You get maximum side grade regardless of the variation in log sizes.

There's A Linck Gangsaw For You

You will be greatly interested in the flow chart below. But, remember that it is just one of the many possible layouts where you can get the advantage of developments by Linck, tops in the gangsaw field. Prices start at $8,800. Let us discuss with you your own production problems.

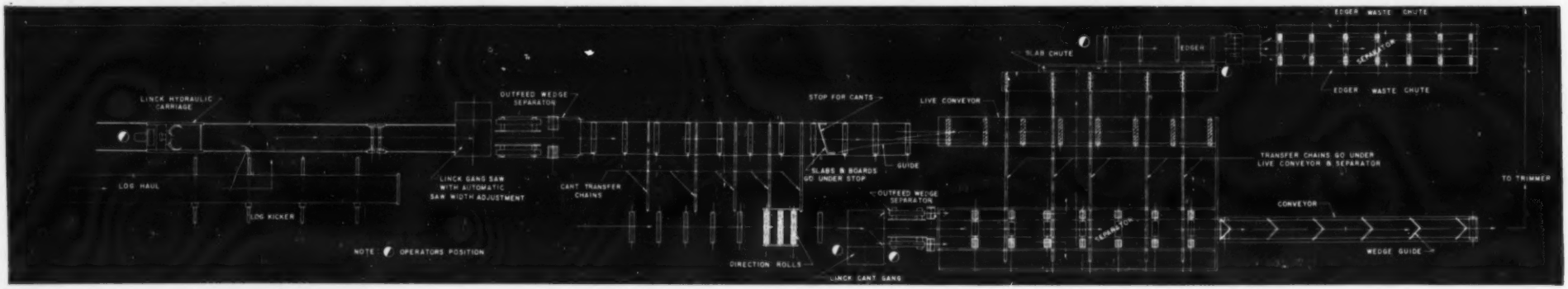
Exclusive U. S. Distributors

Corley MANUFACTURING CO.

Chattanooga, Tennessee Little Rock, Ark. Portland, Ore.

HERE IS LUMBER'S MOST PROFITABLE FLOW CHART

Logs move into the mill on a chain haul from which they are automatically kicked onto the Linck Hydraulic Gangsaw Carriage. The sawyer, who rides the carriage, uses remote controls to shift the two clusters of saws on the first Linck Gangsaw. As the log goes through the saws, it is converted into a cant of the desired width with grade boards sawed from each side. The Automatic Wedge Separator puts the slabs and boards on conveyors leading to the edger. The cant is automatically transferred to the second Linck Gangsaw where it is sawed into boards. Here another Wedge Separator sends center boards straight to the trimmer chain and conveys slabs and outside boards to the edger. Slabs are put into a waste conveyor. Boards go through the edger and are carried to the trimmer chain, while edging strips are automatically diverted to the waste conveyor.



around the shop

This monthly feature answers readers' questions on common shop problems. If you wish to present a problem, or desire further discussion of problems discussed here, write to the Editor.

Ski Construction

I understand that provisions are made in army specifications to permit utilization of lower grade woods while making a ski that will effectively resist twisting and warping. Can you describe this ski construction?

The U.S. Army ski specification referred to is designed to produce a three-layer ski, using true hickories for top and bottom laminations which may be fabricated from 5 to 7 pieces of edge-glued material. They permit the use of lower grade wood, such as white ash, yellow birch, maple and pecan for the center core. It is required, however, that every ski will follow a smooth continuous curve, without any soft spots or stiff flat portions when the ski is depressed. The ski is required to follow a set curve when pressure is applied at a given point.

Tools for Fluting

Among other construction items produced in our plant are fluted columns which we flute with portable power tools. This is an expensive and time-consuming operation. Can you recommend a better fluting method?

A concern manufacturing fluted staved-up turned columns uses a shaper setup for fluting which involves the use of an extension spindle supported by a detachable top bearing. This is used to align the cutting circle of the fluting knives with the center of the column when it is horizontally mounted in a fluting form.

The fluting form consists of a flat base which mounts end brackets carrying two centered discs: a plain disc at the tail center end, and an indexed disc at the head center end. When the center-blocked ends of the column are secured by the centers, the index wheel is arranged to handle spacing the desired number of flutes equally around the circumference of the column.

Toothpick Manufacture

We understand that the manufacturing process used to produce toothpicks is highly automated. Can you give us a brief description of this manufacturing process?

In the automated toothpick manufacturing process strips of veneer sliced to toothpick length are first fed in spools to automatic pointing machines which taper each side of the veneer strip. Rough toothpicks are chopped off these strips by automatic chopper at an average rate of about 3000 toothpicks per minute. The rough toothpicks drop onto a conveyor which carries them through a dryer to deposit them in carrier baskets to be transported to tumblers where the rough edges are removed and the toothpicks are tumbled smooth. A vibrating machine then sifts the toothpicks into tray compartments for packing. Various species are used in the manufacture of toothpicks, but white birch is generally preferred.

How to Sand Ash

We are just starting to use ash in a new line and have some trouble in sanding this wood using our standard procedures. Can you recommend sanding grits for belt and drum sanding operations?

The usual practice is to use No. ½ (60) for rough sanding operations and No. 2/0 (100) for polishing minor construction components. For sanding larger exposed parts, panels and other flat work, the endless bed drum sander mounts No. 1 (50) on the first drum, No. ½ (60) on the second drum, and No. 2/0 (100) on the third drum. Polishing at the stroke sander is done with either No. 3/0 (120) or No. 4/0 (150), dependent upon smoothness and degree of polish required. Where paper is used, a garnet cylinder paper is reported to give best results. If the stroke sander operates slower than 3,500 f.p.m., a regular, full-coated jeans, non-flexible garnet cloth should give

good results. If the speed is higher, it is best to use a full-coated aluminum oxide cloth.

Fire Precautions

Following a small fire in our finishing room, our insurance agent has recommended that we equip our spray booths with asbestos drop curtains. How are these installed and how do they operate?

In the installation of asbestos drop curtains in spray booths, one edge of the curtain is fastened to the top front edge of the booth. The opposite end is securely fastened to a metal pipe cut to the same width as the curtain. This is usually done by stitching a pocket to receive the pipe and stitching or stapling the ends after the pipe has been inserted. The curtain is rolled up on the pipe and fastened to the top of the booth by wires held by fusible links which melt under heat to release the curtain and allow it to quickly unroll and close up the front of the booth.

How to Obtain Crackle Finish

We manufacture a high grade line of custom furniture made to individual customer specifications. We have just received an order for a number of pieces to be given a crackle finish. The sample panel shows seams in the topcoat which permit a different undercoat color to show through. What material is used to give this effect?

This crackle finish used to be obtained by adding china wood oil to varnish, but now is achieved with special crackle lacquer. This crackle lacquer is essentially an overpigmented lacquer that is so heavily loaded that it pulls apart, when applied over the lacquer undercoat, to show through the undercoat color. The size of the crackle pattern may be controlled by the type of coat that is applied. A thin coat will produce small areas and fine lines. A heavy coat will produce large irregular areas separated by heavy lines. The finishing schedule usually requires a 3-coat system and produces a range of effects from a delicate finely crackled surface to a pronounced alligator appearance. Since adhesion to the undercoat is never too good, it is customary to protect the finish with a clear water-white lacquer topcoat over the crackle lacquer.

Water Stain Problems

Since moving to a new plant we have been having trouble with our water stains. Our supplier feels that the water here is too hard for best results. What would you advise to solve this water stain problem?

Soft water usually gives best results in mixing water stains as the stain powders mix more thoroughly and quickly. If your water is hard, it can be treated for stain mixing by dissolving about 1½ ounces of borax or lye in one gallon of hot water. Mix the stain while the water is hot so that the stain powders will dissolve more quickly and thoroughly. This procedure will also improve the strength and clarity of the stain.

What Pipe Sizes

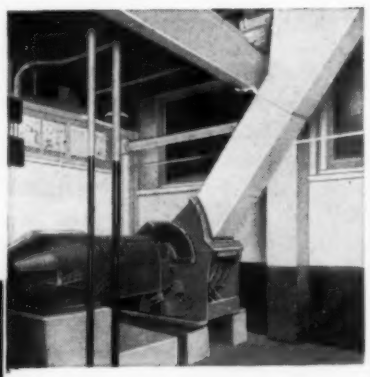
We are installing a new four-side molder and would like to know the proper exhaust pipe

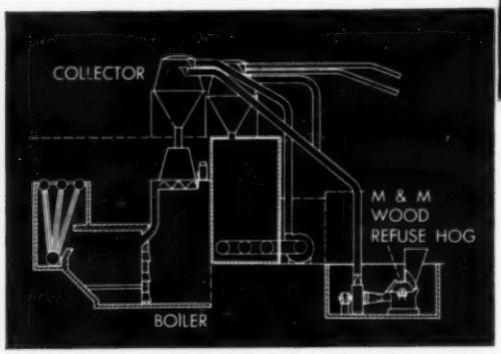
M & M REFUSE HOG INSTALLATION

TURNS HAZARDOUS WASTE INTO VALUABLE FUEL SUPPLY

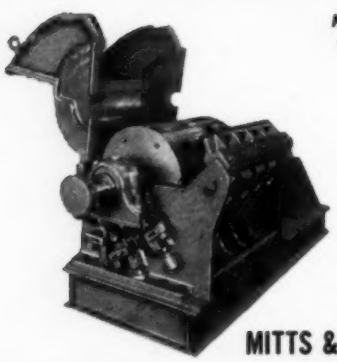
In addition to reducing fire hazards, the installation of the M & M refuse hog (shown at right) converts waste material into money-saving fuel which reduces coal bills, labor costs and creates savings in floor space.

When waste material is processed for fuel, board chips, as sawdust or wood flour, MITTS & MERRILL Hogs—which come in a large variety of sizes and models—produce a better quality, have an increased output and a more uniform product.





The diagrammatic drawing discloses the neatness and simplicity of a complete system, including storage bins and ducts, resulting in a sharp reduction in manual handling of scrap. Firms like the Ford Motor Company and Parke-Davis Company are two of the many who are using M & M refuse hogs in their plants.



M & M Hogs require less labor, and if waste wood is processed for fuel, they will keep power and maintenance costs low. The complete line of M & M hogs is available with top or side intake and side or bottom discharge. Write for complete information.

M & M HOGS

MITTS & MERRILL, 1011 So. Water St., SAGINAW, MICHIGAN

"Builders of work-saving, money-saving and material reclaiming machinery since 1854"

sizes to use to connect this machine up with our dust exhaust system.

Without more complete information regarding cutterheads to be serviced and velocity of the system, etc., it is difficult to provide the information requested. Assuming a 4,000 f.p.m. velocity in branch pipes of our exhaust system, minimum pipe sizes for this application would be on the order of:

Bottom head: Knife width up to 7"-4½" pipe.
Knife width from 7"-12"–5" pipe.
Knife width from 12"-18"–6" pipe.
Knife width 18"-24"–7" pipe.
Knife width over 24"–8" pipe.

Top head: Knife width up to 7"–5" pipe.
Knife width 7"-12"–6" pipe.
Knife width 12"-18"–7" pipe.
Knife width 18"-24"–8" pipe.
Knife width over 24"–9" pipe.

Side heads: Knife width up to 7"–4" pipe.
Knife width 7"-12"–4½" pipe.
Knife width 12"-18"–5" pipe.
Knife width 18"-24"–6" pipe.
Knife width over 24"–7" or 8" pipe.

Canvas in Plywood Construction

We manufacture molded plywood products and are investigating possibilities of luggage plywood as is used in light airplane type luggage. We have been told that some concerns incorporate canvas in the plywood construction. Is this true and how is it done?

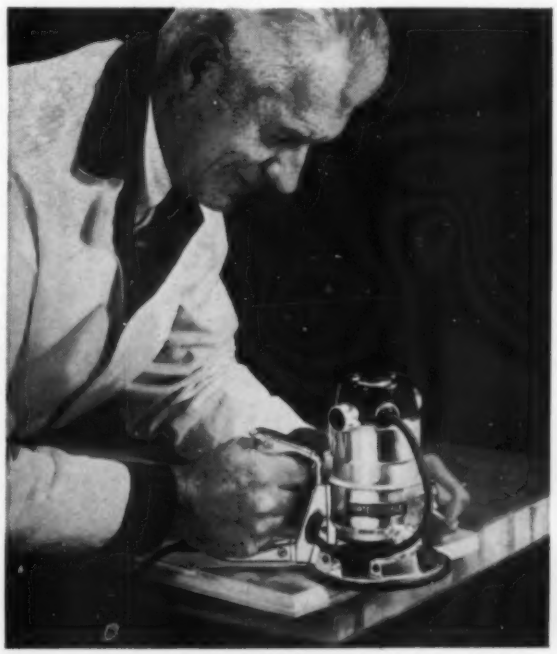
Plywood used for some of the lightweight airplane luggage you mention does incorporate canvas in its construction. The canvas or some other equally strong fabric is inserted between the veneer plies of the layup prior to molding under heat and pressure. The purpose is to provide added flexibility and strength without adding to the weight appreciably. Another use for canvas in the manufacture of luggage is bonding the canvas to the inside of the molded luggage frame in the primary molding operation. Its chief purpose is to prevent wire stitching performed at the luggage plant to make a supporting ledge from splintering the plywood on the inside of the case.

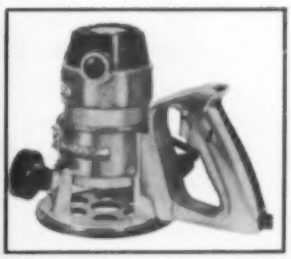
Cleaning-up Problems

Our cabinets are given a three coat lacquer finish and wet sanded and rubbed to produce a smooth attractive finish. Our problem is cleaning up after the rubbing operations. Can you advise a good clean-up material that we can use prior to the final waxing?

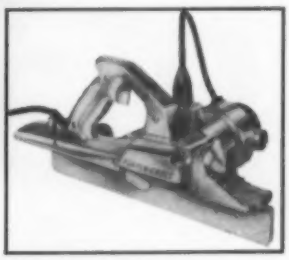
There are a number of commercial cleaners available, but many concerns using a similar finish report good results from the use of a soft soap applied over the surface rubbed with a damp cloth to produce a lather which effectively removes all traces of rubbing lubricant and other rubbing residue. A green soap or a paste solution made by dissolving soap chips in warm water is commonly used. The operation requires cleaning out the cloth regularly until just clear water is used. The cleaned rubbed surface should then be dried by rubbing with a clean dry cloth to remove excess moisture.

Do you have a shop problem? Send us the details and we shall attempt to answer it in these columns.





New Model 150 1¼ h.p. Router
Most advanced router ever built. Outstanding features include: exclusive handle design, instant trigger switch power control, precision ball bearings, micrometer depth adjustment up to one inch. Heavy duty 1¼ h.p. motor may be used for many accessories .....only $79.50



New Model 150-P
16" Plane Attachment
World's finest production plane. Use with your choice of 3 router motors with power up to 1¼ h.p. Trigger switch for safer, instant power control. Planes up to 2¼" wide, fingertip depth control is adjustable up to 3/32" cut. Only $49.50 complete with cutter. Without trigger switch, $44.50

Now — Porter-Cable offers

the newest, most complete router line anywhere!

- A full 1¼ h.p. Router at $79.50
- A full 5 amp. Router at $49.50
- Famous Model 100 Router—now full ⅜ h.p. —still $57.50
- New 1½ h.p. Router — revolutionary pistol grip and trigger switch—$130

Plus the only big capacity Shaper Table using interchangeable motors; two outstanding new Plane Attachments; six new door-hanging and Router-Plane kits; and a full line of accessories for each.

There never has been a quality line of Routers and accessories so complete, so outstanding in design, in versatility, in solid value.

See these new professional quality tools at your Porter-Cable dealer today—or write for full information.

Porter-Cable
Quality Power Tools

PORTER-CABLE MACHINE COMPANY
719-B N. Salina St., Syracuse 8, N. Y.
sanders • routers • shapers • planes
saws • drills
In Canada: write Porter-Cable Ltd., Box 5019, London, Ont., Canadian prices slightly higher.

Serving the Industry Since 1852

Another FIRST

PREVENTS –

END SNIPING

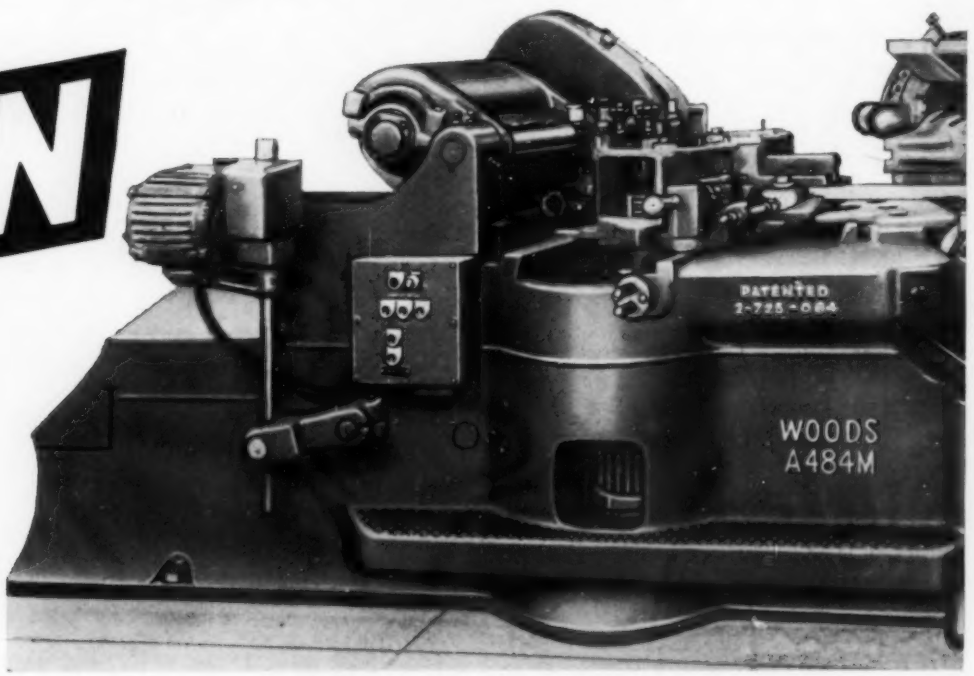
TORN GRAIN

KNOT LOOSENING

A-484M DIAGONAL **PLANER MATCHER**

Upgrading of all stock, with astonishing improvement in finish on the lower grades now made possible with the revolutionary DIAGONAL PLANER and MATCHER.

NEW



S. A. WOODS MACHINE CO.

27 DAMRELL STREET

BOSTON 27, MASS.

Serving the Industry Since 1852

by WOODS®

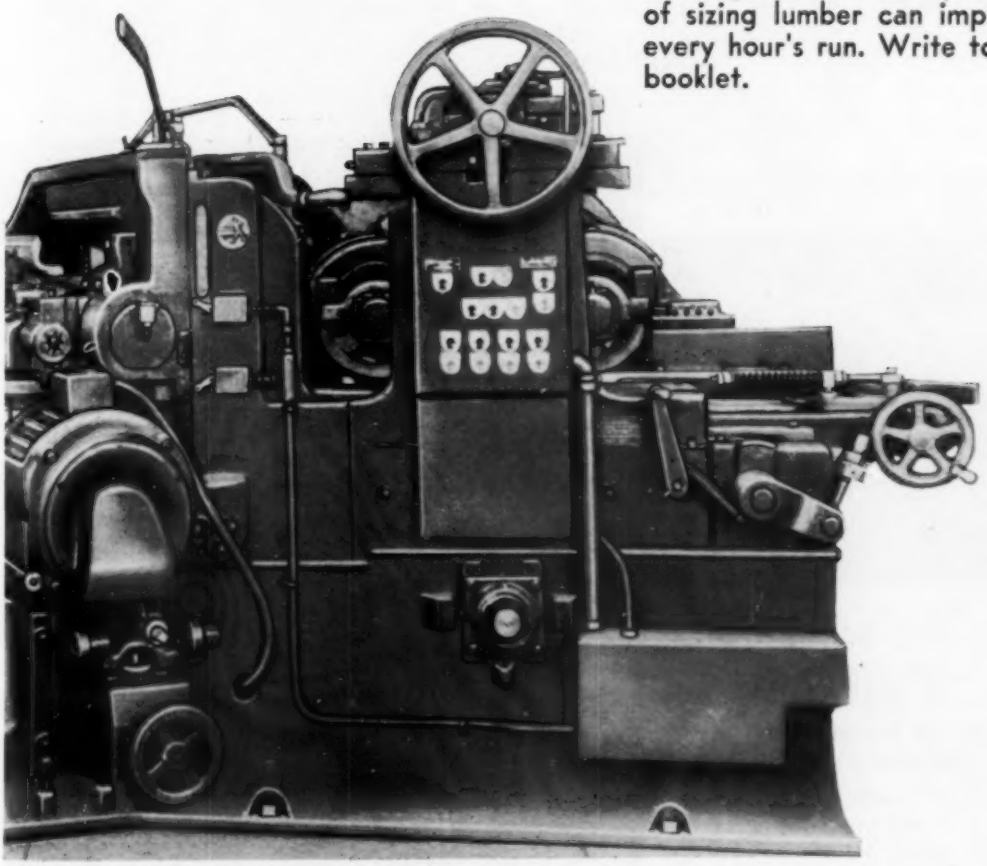
INSURES –

SMOOTHER FINISH

PRODUCTION INCREASE

REDUCED POWER CONSUMPTION

Investigate how this improved patented method of sizing lumber can improve your margin on every hour's run. Write today for the A-484M booklet.



Branch Offices: ARK., Little Rock • CAL., San Mateo • N. C., Greensboro • N. Y., Mt. Vernon
ORE., Portland • TENN., Memphis
Canadian: B.C., Vancouver, Akhurst Machinery Co. • ONT., Galt, Canada Machinery Co.
Export Dept.: United States Machinery Co., 90 Broad St., New York City

A roundup of day to day in-plant problems and how they were handled by management men. Each incident is taken from a true-life grievance which went to arbitration. Names of some principals involved have been changed for obvious reasons. Readers who want the source of any of these cases may write to WOOD WORKING DIGEST.

Is granting leave-of-absence mandatory?

What Happened?

The company rule regarding leave of absence reads as follows:

"Leaves of Absence exceeding two weeks shall not be granted. These leaves must be requested on a form provided by the personnel office."

Charles Quarrez went to the personnel office and got the required form. He filled it out and indicated that he wanted a ten-day leave to attend his cousin's wedding in a distant city. The following day he was told by his foreman that his request for leave was turned down because he couldn't be spared at this time, while certain "rush" orders were backed up.

Quarrez felt that the company was quite unfair in denying him the leave, and that it had no right to do so. He claimed that the rule only said that the leave could not exceed two weeks, and had to be requested on a special form. He had complied with the rules.

The foreman replied that the company had to be the judge of when a leave was to be granted, and the reason for the leave as well as the company's needs had to be taken into consideration. Quarrez still felt that he had a right to the leave, and took the case up to arbitration.

Was the Foreman:
RIGHT ☐ WRONG ☐

What Arbitrator Wm. Waite Ruled

"The proper discharge of normal management responsibilities re-

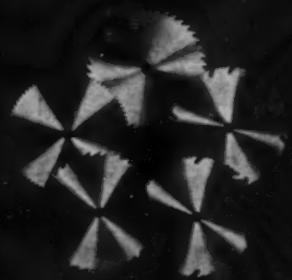
CHECK-MATE YOUR SAWING PROBLEMS WITH HEINEMANN SAW BLADES

CARBIDE TIPPED SAWS
THE "KINGS ROW" OF SAWS
Unexcelled performance. Custom-built and perfectly sharpened for each particular application. Perfectly balanced and tensioned. For cross cutting, ripping or mitering of all materials that can be sawed. Available either for wood or non-ferrous metals.

HARD-TIP SAWS
THE "WORK-HORSE" SAW
Now deep-hardened for easy re-sharpening, yet so economical to buy and stays sharp so long, it's practical to replace this blade when it dulls to save re-sharpening costs. Saves 50-60% of your sawing costs.

PLY-SAWS
"THE CHOICE OF CRAFTSMEN"
FOR FINE CABINETRY, PLYWOODS AND VENEERS
For extremely smooth cutting of plywoods and veneers, for fine cabinet and finishing carpentry, rely on the excellent results of this blade.

HEINEMANN SAWS
A SAW TO "CHECK-MATE" ANY PROBLEM
A saw blade to meet any job application. Blades with quality, satisfaction and performance "built-in" by the hand of skilled saw makers. Saw blades to meet your most critical standards and at competitive prices.

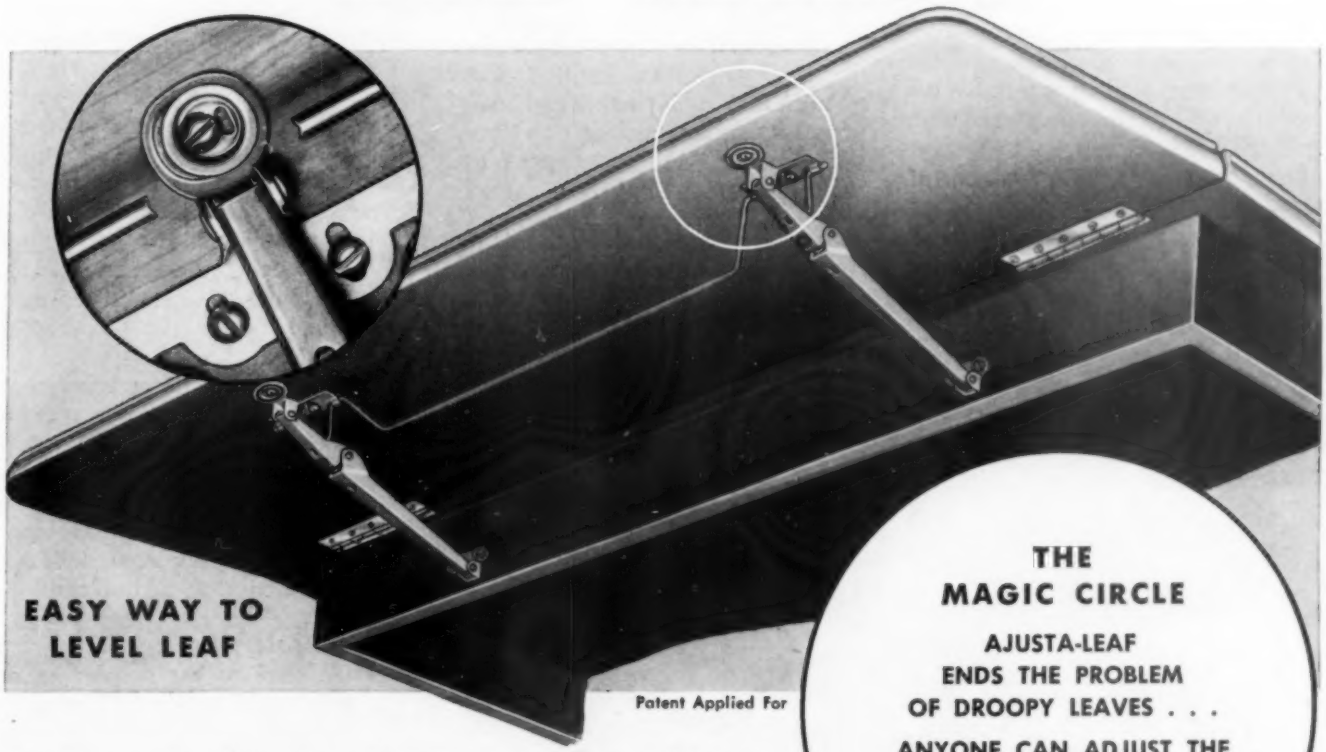


HEINEMANN SAW CORPORATION
CANTON 6, OHIO

SEND TODAY FOR CATALOG No. 23
It contains information and prices on our complete line of quality products.

IF YOU MANUFACTURE OR SELL TABLES

you've wished for this!



Patent Applied For

THE MAGIC CIRCLE

AJUSTA-LEAF ENDS THE PROBLEM OF DROOPY LEAVES . . .

ANYONE CAN ADJUST THE SUPPORTS INSTANTLY WITH ONLY A SCREWDRIVER!

An important new adjustment now added to

WABASH Self-Releasing Drop Leaf Supports

AJUSTA-LEAF . . . so simple you'll wonder why it hasn't been thought of before . . . so easy to understand that every consumer will appreciate its value . . . so low in cost you cannot afford to manufacture tables without it! In fact AJUSTA-LEAF will enable you to actually save labor in previously costly upfitting of table leaves.

A new idea . . . an amazingly valuable sales feature, now added to Self-Releasing Drop Leaf Supports by Walter of Wabash. *Now, prevent pinched fingers and make it easy for the table purchaser to adjust drooping table leaves whenever they require it.* Be *the first* to offer these sales-making features on your tables. Write for more information about Ajusta-Leaf today.

Regular Drop Leaf Supports Also Available With This Feature

SIMPLE ADJUSTMENT

To adjust leaves, simply loosen the screw inside the Ajusta-Leaf disc. Level table leaf, then tighten screw.

SLIDE, HARDWARE ENGINEERING SERVICE *Free*

Planning new tables? Have your extensions and hardware styled by specialists. Send a print of each table to us. We'll plan the extension or folding features for greatest economy of manufacture *at no cost to you.*

B. WALTER & CO., Inc., WABASH, INDIANA *Walter of Wabash*

SLIDES • HARDWARE • SELF-RELEASING DROP LEAF SUPPORTS

quires that the company have control over the number and type of employees on duty. Even though the published rule does not specifically indicate that leaves are within the discretion of management, it would be most unrealistic and impractical to assume that it was intended to allow workers individually to decide when and to whom leaves are to be granted. The rule must be interpreted to mean that leaves of over two weeks will not be granted unless the circumstances are most unusual, whereas shorter leaves will be granted at the company's discretion. Grievance denied."

Does time out on strike count towards eligibility for automatic wage increases?

What Happened?

The company's agreement called for a 5c wage increase after three months of employment, and additional 5c automatic increases every three months thereafter until the maximum rate for the job was reached after 12 months of employment. At contract renewal time, a strike took place when the company and union could not agree on new terms. Thirty days later the employees went back to work under a new agreement which called for a renewal of all the terms of the old contract and provided for an across-the-board wage increase. The settlement stipulation also contained the usual language that no punitive action would be taken against the strikers. Subsequently, when the company computed the automatic increases, it did not take into account the 30 days spent on strike. The employees affected protested against the delay in their increases and brought the case to arbitration. Here the company justified its action on the following grounds:

- The term "three months of employment" must be interpreted to mean three months of actual service.
- During the strike no agreement existed and thus there was no obligation during that period to pay these increases.
- Automatic wage increases are intended to compensate employees for increased skills acquired during actual employment.

The union replied:

- To deprive the employees of this time is to impose a penalty for striking and that is contrary to the terms of the settlement agreement.
- The strikers remained employees while they were out on strike, and the strike was part of the period when seniority accrued.
- The agreement calls for reaching the maximum in 12 months, and the company is increasing the time to 13 months by its action.

Was the company:
RIGHT ☐ WRONG ☐

What Arbitrator Sidney Cahn Ruled

"Automatic increases are generally granted to enable an employee to periodically receive an increase and reach a set rate after a given period of time. They differ from merit increases which generally are considered compensation for increased ability and skill. Merit increases are not given automatically or with any degree of regularity but only upon the showing of merit.

EKSTROM - CARLSON

No. 434

ROUTER

POINT FOR POINT...

CHECK THESE FEATURES:

- ☑ 1. SLIDING SPINDLES, DETACHABLE HEAD
- ☑ 2. 28" THROAT CLEARANCE
- ☑ 3. 10,000 AND 20,000 R.P.M. SPINDLE SPEEDS WITH SINGLE-SPEED OR TWO-SPEED MOTORS
- ☑ 4. OPTIONAL SINGLE OR COMPOUND TILT TABLE
- ☑ 5. LARGE TABLE SIZE 24" x 36", LARGER SIZES AVAILABLE
- ☑ 6. WORM AND GEAR TABLE LIFT
- ☑ 7. DOUBLE TAPER COLLETS
- ☑ 8. MOTOR DRIVEN BLOWER FAN
- ☑ 9. 50% LESS SPINDLE WHINE
- ☑ 10. PRICED BELOW COMPETITION

EKSTROM, CARLSON & CO., 1200 Railroad Ave., Rockford, Ill.

"Automatic increases do not depend upon the acquisition of skill or ability, but only upon acquiring seniority. Even if an employee does not increase his skill, if he is retained for the required period of time he gets his automatic increases. No provision was made in the settlement agreement to deduct seniority for the time on strike. On the contrary, the company specifically agreed not to levy any penalties against the strikers. Time on strike will be counted toward required time for automatic progression increases."

Must you take an employee back the very day he shows up after a leave of absence?

What Happened?

Burt Lewis, a regular employee in the display department went to his department head and asked for six months off to go out West and straighten out the affairs of his father, who had just died. The leave was granted as the supervisor felt Lewis had a good reason, and he could be spared with some re-scheduling. Just before the expiration of the six-month period, Lewis showed up in the department one morning, ready to work. Just that day, the department head had left on vacation. The man in charge told Lewis he didn't have authority to rearrange the work schedules, and Lewis would have to wait for the head man to get back—about two weeks. Lewis wasn't happy about this, as he was anxious to get back on the payroll. But the man in charge wouldn't sign his re-employment slip. When the head of the department returned, Lewis went to see him, and was put to work at once. Shortly thereafter, Lewis filed a grievance, asking for pay for the two weeks he had waited. When the case went to arbitration, Lewis argued:

- Six months was the maximum he had requested, and no mention was made of a minimum.
- He was not told that prior notice was needed.

The company replied:

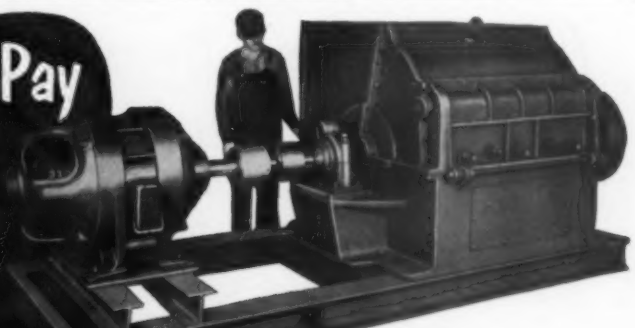
- The leave and its terms was for the company to establish.
- After such a long leave, the company needs notice of intention to return in order to integrate the employee.

RIGHT ☐ WRONG ☐

What Arbitrator Wolff Ruled

"It seems to me that after being away on leave of absence for close to six months, it would be unfair to impose upon this company an obligation to put Mr. Lewis back to work the very day he decided to return. Surely the company was entitled to arrange its schedules and operating plans so the reinstatement could be accomplished in a business-like manner. The company was justified in asking for reasonable notice. I find in the circumstances presented here the company was entitled to one week's notice for this purpose. Lewis could have provided notice by mail in advance of his return. The two weeks that the company took was not reasonably required as witnessed by the fact that he was reinstated in short order after the supervisor returned. Lewis should receive back pay for a one-week period."

It Will Pay You To CHECK These Facts!



Here's What

WILLIAM'S "NO-NIFE" HOGS

✓ Can Do For You:

1. Increase The Heating Value Of Your Wood Scrap!

When reduced to chip form by hogging, wood burns more evenly—gets *all* the heat value possible. Unhogged slabs, trimmings, large pieces, restrict air flow, smother fire, result in inefficient combustion.

2. Improve Quality Of Wood Flour And Sawdust!

Processing wood scrap with a Williams Hog, for resale in the form of wood flour or sawdust, assures more uniform grinding and sizing—much lower labor costs—reduced power requirements.

3. Reduce Handling Cost As Much As 75%!

One man firing wood in chips can handle the same tonnage as would require three men if fuel scrap remained in awkward lengths and pieces that necessitate individual handling.

4. Your Operation May Permit Complete Automatic Handling

Williams has made many automatic installations to hog and convey waste wood to stoker or boiler at tremendous savings in handling expense. Other installations to automatically grind, separate and package wood flour and sawdust result in phenomenal reductions in cost.

Williams equipment will actually pay for itself in a few months, then continue to produce extra profits for many years. Investigate now!

Write for Details

WILLIAMS BUILDS A COMPLETE LINE • Hogging, Grinding & Shredding Machines • Vibrating Screens • Conveying Systems • Air & Mechanical Separators • Complete "Packaged" Plants • Cyclone Collectors

WILLIAMS PATENT CRUSHER & PULVERIZER CO. • 808 ST. LOUIS AVE., ST. LOUIS 6, MO.

WILLIAMS

CRUSHERS GRINDERS SHREDDERS

OLDEST AND LARGEST MANUFACTURER OF HAMMER MILLS IN THE WORLD

GOT *Delivery* PROBLEMS?

Call Williams-Brownell

PRECISION W-B WOOD PARTS

Our truck transports give Special Delivery service of Hardwood Dimension

YOU BENEFIT 3 BIG WAYS!

1. When you buy Hardwood Dimension from Williams-Brownell, your order is carefully loaded and shipped in closed truck trailers—*owned and operated by Williams-Brownell.*
2. Your material is protected against *any kind of damage* enroute to you— delivered right to your door in perfect condition—*100 per cent usable!*
3. Tight for time? This Special Delivery service makes possible second morning delivery to any point east of the Mississippi. For example, shipments leaving Asheville Saturday arrive in Chicago, New York, Philadelphia and Miami on Monday.

And remember this! W-B *Precision Wood Parts* are manufactured with maximum accuracy from properly kiln-dried Appalachian Hardwoods to your exact specifications.

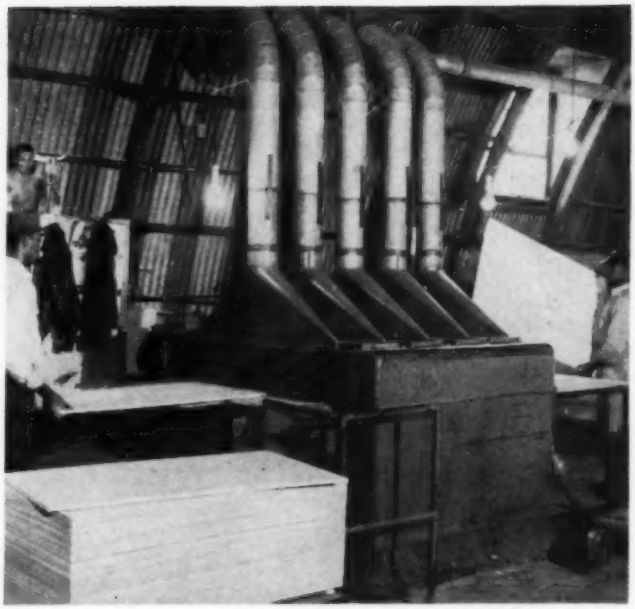
Get the facts! If it's wood, the chances are good, Williams-Brownell can make it for you—and *save you money, too!* Let us quote on your requirements.

Send specifications to W. D. Soderquist, P. O. Box 1091, Asheville, N.C.

HARCO

WILLIAMS-BROWNELL Inc.
ASHEVILLE, NORTH CAROLINA

ESTABLISHED 1905



Operating view of Solem four-drum endless-bed sander at Tri-State Veneer & Plywood, Inc., Memphis, Tenn. Plywood dimension is being processed. Observe the long-radius elbows in the branch blower pipes, joining the special fitting leading into the main blower duct, where the pipe passes through the side of the quonset building.

POINTS TO CONSIDER WHEN INSTALLING BLOWER PIPES

There are various points wherein the ordinary sheet metal man would go wrong in making a suitable blower installation. Therefore, such work should never be entrusted to anyone *but experienced blower engineers.* One thing to carefully avoid is short-radius bends in blower pipes; such tend to plug up and cause trouble. Sometimes, however, short-radius bends are worse than in other cases.

The hood and connecting pipe for the bottom cutterhead of a double-surfacing planer is one case in point. Because it must often receive shavings from the full length of the planer head; and because it receives them in a downward direction, and must then conduct them around a 90° arc, so they can be drawn away horizontally, it is difficult to obtain a suitable long radius on the bend. The amount of room available between the lower planer cutterhead and the floor is small.

Where possible it is always a good idea to provide a pit in the floor where a double surfacer is to be set. This will allow greater length in radius of the bend used in connection with the lower hood. Sometimes, where a double-surfacing machine is mounted on a floor above a basement, or installed on an upper floor, it becomes possible to pass a blower pipe from the lower hood downward through the floor at one point. Then return the pipe up through the floor at another point. In this way, it is easy to avoid a too-short radius in the pipe.

Aspects of Short-Radius Bends

The fact is that too-short radii should always be scrupulously avoided in any elbow or bend of branch pipe. Shavings must often be received from a cutterhead in a downward direction and returned upward to the main suction duct of the system. At the same time, it is often desirable to have the installation as compact as possible, so the blower pipe will not be in the way. Therefore, such installations have often been made with two 90° bends, with a very short horizontal run along the floor between them. This is sometimes found more convenient than incorporating a bend of 180°. Two 90° bends are also less likely to clog than where a single 180° bend is employed.

Never under any circumstances should the inside radius of any bend in a blower system be less than diameter of the pipe involved. This short a radius can *sometimes* be used at a mortiser, a boring machine, or some other unit where refuse collected is of light unit weight and of non-packing type. At various other machines, where shavings are quite long, or where sander dust is involved, (which tends to pack) much greater radii should be used.

In an occasional case, several elbows must be made to merge into the end of the main duct of a blower

Interesting view of exhaust pipes and cyclones, showing several Day fan systems on one roof, discharging across a driveway into dual cyclones above refuse storage vaults. These cyclone separators are of the type which discharge cleaned air tangentially from the top bonnet. Note the annular fins applied to the long stretches of blower pipe, uniformly spaced. By using these rings in this manner, the pipe is strengthened, so it does not need a bridge or other means of support over the span shown.

system. Under such conditions, great care should be used in making the fittings. The inside radii of the pipe bends should be longer than usual. An instance in point is seen in one of the pictures, where a four-drum sander has five exhaust pipes fitted into the end of a line in this manner.

Tangential Air Discharge at Cyclone

Some excellent blower systems incorporate cyclone separators of a type which discharge the cleaned air tangentially from the top bonnet. Using this system, cyclonic action can be maintained all the way through the collector, minimizing back pressure. The partly-cleaned air goes up through a skimmer stack, where it is still spinning in cyclonic manner. Where velocity reaches its maximum (which is at the smallest part of the stack) outlets are provided. These allow secondary centrifugal separation of fines before the air is exhausted. This is a particularly good layout for localities where rigid restrictions are imposed.

Free—helpful facts about...

CALIFORNIA REDWOOD

With its unique grown-in properties–workability, durability, beauty, dimensional stability, high finish retention–redwood can do more jobs better than other materials!

You'll find helpful information in the free data sheets prepared by the technical staff of the California Redwood Association—on Machining —Gluing—Fastenings—Finishes—Grades—and Physical Properties of Redwood. Write now for your free copies.

CALIFORNIA REDWOOD ASSOCIATION

576 SACRAMENTO STREET • SAN FRANCISCO 11

PREFAB BUILDERS HAVE SPECIAL PROBLEMS

By John E. Hyler

▼ Problems encountered in producing prefabricated homes differ quite strongly, and in many ways, from nearly all other types of woodworking production. Means must be found for doing such work with speed; also for performing it in such manner that it does not take too great a toll of manual energy. In consequence, both machining operations and handling operations depart quite strongly from the usual woodworking setup. Many builders of prefabricated homes, after carefully considering standard equipment on the market, discover that for their particular purpose, it is best to invest in a certain number of special machines, even though cost on them runs very high.

Typical among such are machines that will cut off or otherwise work both ends of long joists, studding, rafters, etc. Cutoff saws of the general type which may have the saw blade both tilted (to cut bevels) and swiveled (to cut at an angle), are particularly suitable for use in such plants, where jack rafters and similar pieces must be made from time to time. Birdmouth cuts in common rafters are often made on a considerable number of rafters with a single pass of a straightline saw, tilted and equipped with a special cutterhead for the purpose. This greatly speeds the process.

Much heavy lifting would be involved if plant handling equipment were not carefully worked out and installed. So-called wall panels (portions of walls which have been preliminarily assembled in special jigs) are usually transported down the line by monorail or slow-traveling overhead chain conveyors, while installation of doors, windows, and certain other operations are performed. The arrangement is such that workmen stand at convenient working height in relationship to the panels, as they travel down the conveyor.

Painting Flat Stock

A large number of parts are painted before assembly; the proposition of seeking for a fast method is the same here as elsewhere. Consequently, modern roller coaters are much favored for this work, as for instance those made by Black Brothers. These machines are so designed that actual paint application rolls are each equipped with a doctor roll, set up so the crotch between each appli-

Infeed side of Black Brothers' two-side roller coater, operating in the plant of Scholz Homes, Inc., Eastern Division, Wilmington, Del. This machine is provided with a variable-speed feed mechanism, which can be plainly seen in the left foreground. Turning the handwheel shown at the extreme left speeds or slows the feed, depending upon the direction in which it is turned.

cation roll and its respective doctor roll serves as a paint reservoir.

The tremendous amount of work turned out in some of these plants, and the great volume of paint consequently required, would be a revelation to the uninitiated. When one speaks of 50,000 gallons of paint per month or more (as used by some of the larger prefab builders) this fact can well be appreciated.

A roller coater of the type used in some of these plants can be seen in the accompanying illustration. One interesting possibility of this machine is the manner in which it is used for coating edges, on certain square-sectioned parts where both edges and flat sides are to be painted. In one plant, long pieces of trim and similar material come to the roller coater tied in bundles, with twine.

With the rolls of the machine adjusted a proper distance apart, these bundles are run through in such manner that the edges are coated in multiple. Presence of the twine may leave a slight mark, but this is not enough to be particularly objectionable in regard to most stock of this kind, since it will show only on edges. After the material is passed through the machine and coated on the edges in bundles, those bundles are broken down and the pieces run through the roller coater singly, coating the two flat sides.

"No waiting two weeks for your money here. When you complete a job on the bandsaw, insert your job card in the coin automat and get paid promptly."

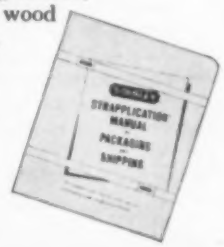
Another **STANLEY STEEL STRAPPLICATION*** on the job

STANLEY

Pre-packaging for Pre-fabs

A Pennsylvania builder of pre-fabricated homes wanted to wrap up a tough handling problem and reduce handling costs. He did . . . by using Stanley Steel Strapping to bundle roof trusses ("collapsed" to save shipping space – see above), and short pieces of lumber used for blocking and bridging, and as headers. Boxes holding hardware and other small parts are also secured with Stanley Steel Strapping. Reinforced by the strength of steel, the packages reach the job site intact. There's no danger of missing parts that could delay the erection of the pre-fab.

Stanley Steel Strapping does an equally efficient job of bundling dimensional lumber, sheathing, veneer, flooring, specialty lumber and other wood and wood products for easy handling and safe shipment. WRITE FOR YOUR FREE COPY of the "Stanley Strapplication Manual of Packaging and Shipping" to STANLEY STEEL STRAPPING, Division of The Stanley Works, Dept. L, 1426 Lake Street, New Britain, Conn.



******The system-atic way to solve specific packaging and shipping problems*

STANLEY **INSURE IT – SECURE IT WITH STANLEY STEEL STRAPPING**

AMERICA BUILDS BETTER AND LIVES BETTER WITH STANLEY

STANLEY

This famous trademark distinguishes over 20,000 quality products of The Stanley Works—hand and electric tools • drapery, industrial and builders hardware • door controls • aluminum windows • stampings • springs • coatings • strip steel • steel strapping—made in 24 plants in the United States, Canada, England and Germany.

Available Literature

Trucks

This bulletin gives information about some of the storage and shipping problems of seven manufacturers and how they solved them. Each case history is fully illustrated with photos taken in the plants.

Equipment used to solve the handling problems are hand lift trucks, electric fork lifts and electric "walkie" trucks. In addition, a number of special industrial truck attachments, such as drop-bottom boxes, are involved.

Lewis-Shepard Products, Inc., Dept. R-19, 125 Walnut Street, Watertown 72, Massachusetts.

Use postpaid card. Circle No. 1

Concave Log Rolls

This data sheet gives detailed information on Wheland's concave log rolls for conveying logs at sawmills. These log rolls can be used in front of and behind debarkers, in log haulups and other places around the mill where logs must be moved longitudinally.

Ask for Bulletin CLR-1 available from the Wheland Company, Signal Mountain Road, Chattanooga, Tennessee.

Use postpaid card. Circle No. 2

Nevamar Board

Here is a 4-page folder illustrating and describing this series of wood grains developed expressly for the furniture industry and known as the "Woods of Distinction."

It is a high-pressure laminate made 5/32" thick to form a sturdy, rigid panel that does not require plywood backing. Made in sheet sizes 36" and 48" wide x 96" long, it is suitable for both horizontal and vertical surfacing and is ideal for fast and easy fabrication. It is available in a complete range of colors and patterns, including many wood grains. Samples will be sent on request.

National Plastic Products Company, Odenton, Maryland.

Use postpaid card. Circle No. 3

Exterior Finishes for Redwood

As an aid to those who wish to apply an exterior finish, the California Redwood Association has published a revised supplement to its Redwood Data sheet 4B3-1, "Exterior Finishes for Redwood."

Listed in this supplement are the 20 natural finish systems which have met the minimum durability standards of the CRA.

The Data Sheet supplement may be obtained from the California Redwood Association, 576 Sacramento Street, San Francisco 11, California.

Use postpaid card. Circle No. 4

Timber Handbook

This handbook is a complete compilation of basic reference material for designing and building in timber. It is a comprehensive timber design reference as well as a practical field handbook. It offers the essential information needed to develop and construct the best, most economical wood structures.

Order "Timber Design and Construction Handbook" from Dodge Books, F. W. Dodge Corporation, 119 West 40th Street, New York, New York.

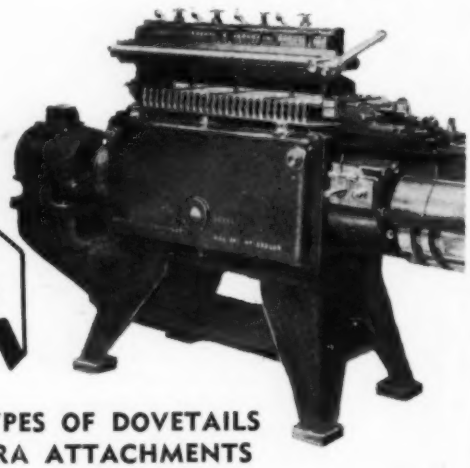
Masonite Benelex

This 12-page booklet describes and illustrates the use of a high density, lightweight hardboard laminate, as an industrial die stock, in finished products and in the design of electronic equipment.

One of its characteristics is that it is easily worked with woodworking tools. Absence of grain and defects reduce waste while uniform hardness and constant physical and electrical properties assure economical performance in any recommended application.

It can be used in a great variety of products such as work table tops, spool ends, laboratory work surfaces, breaker strips, and other uses.

NEW AUTOMATIC DOVETAILER



MAKES ALL TYPES OF DOVETAILS WITHOUT EXTRA ATTACHMENTS

Illustration shows model with manual clamping. Also available with pneumatic clamping.

Get All These Outstanding Features

- ► Ball-Bearing spindles driven independently by worm gears completely enclosed in oil sump.
- ► Uniform dovetails because all cutters rotate in one direction—simplifies removal and cleaning of cutters.
- ► Easy, accurate "setting up"—indicator scales and fine screw adjustments for all controls.
- ► Sump lubrication for minimum wear and maintenance.
- ► 3 adjustable speed cycles of 6-9-13½ seconds.
- ► Handles bent or curved work.

Fully automatic in operation, the new Dovetailer will let you make furniture dovetails, secret dovetails, box taper dovetails . . . any kind of dovetail . . . faster, cleaner and more accurately with a minimum of labor.

•

Also available in ball-bearing level operated model.

WRITE TODAY FOR ILLUSTRATED BROCHURE

SUPREME WOODWORKING MACHINERY CORP.

50-52 HOWARD STREET NEW YORK 13, N. Y.

The tensile strength is 7000 lbs. per square inch and shear strength is 7100 lbs. It has a Rockwell scale hardness of 90. Although it takes and holds any surface finish, the inherent surface characteristics eliminate the need to apply expensive finishes for hardening.

Masonite Corp., 111 West Washington Street, Chicago 2, Ill.

Use postpaid card. Circle No. 5

Cost-Cutting Idea File

This file is about the Gasway Corporation's fact finding file on roller coating equipment. There are two types of equipment manufactured by this company. One is used in the finishing of individual sheets or panels and the other for the finishing of continuous strips.

The panel type coaters are being used in many industries where the finishing of such products as plywood, wallboard and Masonite is required.

Gasway Corporation, 6463 N. Ravenswood Avenue, Chicago 26, Illinois.

Use postpaid card. Circle No. 6

Dexion Slotted Angle

Here is a 4-page booklet on Acme Steel's high speed framing system for building repeating pattern structures with the Dexion slotted angle. While the system works on any size job it is especially economical when building shelving, racks, tables, platforms, or any structure that repeats a basic pattern.

Acme Steel Company, 135th and Perry Avenue, Chicago 27, Illinois.

Use postpaid card. Circle No. 7

Portable Routers

This 8-page bulletin describes the Onsrud line of air turbine motors with attachments for use as portable routers. The various motors are illustrated and sizes and types are given for the portable router needed. Among the other tools listed in this bulletin are the router bit grinder and the beveling tool.

Onsrud Machine Works, Inc., 3900 Palmer Street, Woodworking Machinery Division, Chicago 47, Illinois.

Use postpaid card. Circle No. 8

Wynnewood

This 4-page folder shows many of the applications of this particle board. Wynnewood offers three densities of product to meet all applications from flooring, furniture, walls and ceilings to corestock—for stores, offices and other uses. It is easily machined, free from grain and is tough.

Wynnewood Products Company, Jacksonville, Texas.

Use postpaid card. Circle No. 9

Diehl Molders

Here is a 2-color, 8-page folder about Diehl's 8" and 6" molders. The folder describes the new features of the Diehl 804 (8") and 604 (6") molders, including the hopper feed, feed works, top head chipbreaker, air controls, pressure bars and hold-downs, the new control panel and direct-current braking. It is illustrated throughout and includes complete specifications.

Request Bulletin M-957 from the G. M. Diehl Machine Works, Inc., Wabash, Indiana.

Use postpaid card. Circle No. 10

High Frequency Electronic Equipment

Here is a 6-page folder illustrating Industron's high frequency equipment. Some of the equipment shown in this folder are: edge gluers, feed presses, generators and panel-on-frame presses.

Available from Industron Corporation, 55 Needham Street, Newton Highlands, Massachusetts.

Use postpaid card. Circle No. 11

Brand Recommendation Chart

This chart was designed to simplify the process of choosing the right type of belting for each elevating or conveying job. Classes of services for which each belt is suited are listed in an easy-to-read tabular form, along with principal characteristics of the various brands.

The catalog also contains several pages of technical data and formulae, giving detailed information for computing belt thickness and strength re-

Here's how VMT MILLED-TO-PATTERN KNIVES

keep pace with Modern Operations at Bassett Furniture Industries

VMT Milled-to-Pattern Knives used by Bassett can rabbet dresser polystyles, corner posts, etc. at rate of 125 feet per minute—making precision cuts for the life of the tool.

Bassett Furniture Industries plants depend on Virginia Machine Tool Company to design and custom make milled-to-pattern knives to duplicate, to exacting tolerances, shapes desired in production runs. Slip cutters are used only for cutting samples. Bassett wants three things from a cutting tool (1) fast production (2) clean, sure cut (3) a knife that never changes its shape of cut for the life of the tool. That's why they turn to men with years of know-how who can look at a job to be done, then design and make knives that will meet their exacting requirements.

Bassett Furniture Industries has found VMT knives right for any curved surface, for any piece of wood. They know it's only necessary to sharpen face of knives and they give nick-less surface to take a good finish — eliminating any extra sanding operation. They realize it takes but a matter of set-up minutes and you're ready to cut — up to speeds as fast as 125 feet per minute.

View of rabbeted sections ready for assembly

What VMT Milled-to-Pattern knives can do for Bassett, they can do for you. Write, wire or phone us today. Ask for our new catalog — giving you complete details on all VMT wood-working tools.

Virginia MACHINE TOOL CO.
BASSETT, VIRGINIA

Precision Made Tools For The Woodworking Industry—Standard or Milled To Pattern

quired for certain tasks. Information on proper installation and operation of elevating and conveying systems is also included in this section.

Copies of the belting catalog and engineering handbook can be obtained from the Imperial Belting Company, 1756 S. Kilbourn Avenue, Chicago, Illinois.

Use postpaid card. Circle No. 12

Form-Saver Brochure

Here is a 4-page illustrated brochure on L. Sonneborn Sons' form-saver which is a quick drying protective coating with durable, smooth finish for plywood form panels.

Included in this brochure is information on advantages and features of this coating which extends the life of plywood forms and makes possible many re-uses of the forms before re-coating is necessary.

This coating may be applied by either brush or dip. Full instructions for either type of application is outlined. Sketches illustrate in step-by-step fashion the treatment of plywood with the product.

Building Products Division, Dept. FS, L. Sonneborn Sons, Inc., 404 Fourth Ave., New York City, New York.

Use postpaid card. Circle No. 13

Self-Tapping Wood Insert

Here is a 4-page bulletin covering the installation and application of the self-tapping wood insert as an addition to the Heli-Coil line of wire thread inserts. The new insert provides low cost threads that will not strip under stress or hard use in wood related materials. The inserts are used with plywood, fiberboard, chipboard and laminates in a drilled hole without tapping.

Drawings and photographs are included in conjunction with condensed descriptive information on power and hand installation procedures, typical process operational techniques and typical applications in wood and related materials.

Copies of Bulletin No. 750 may be obtained from Heli-Coil Corporation, Danbury, Connecticut.

Use postpaid card. Circle No. 14

Cope and Tenon Heads

Here is a 16-page bulletin about Wisconsin Knife's cope and tenon heads. The heads are fully explained and illustrated in this booklet.

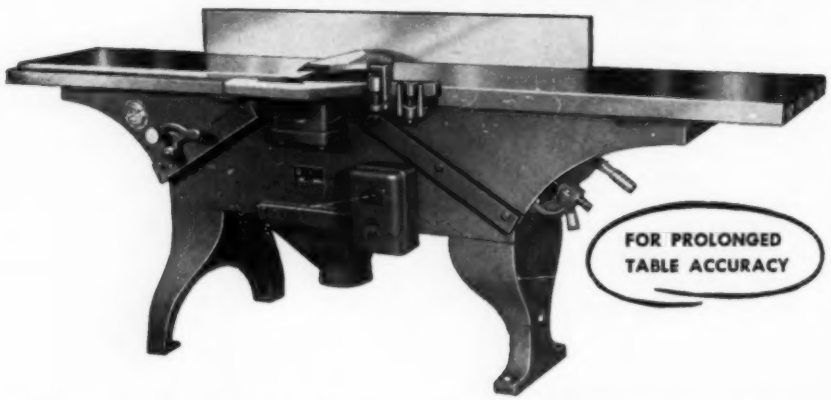
Many standard types of cope and tenon heads are illustrated together with their special attachments and applications.

Bulletin No. 500 is available from the Wisconsin Knife Works, Box 869, Beloit, Wisconsin.

Use postpaid card. Circle No. 15

FOR LONG LASTING HEAVY DUTY ACCURACY

NORTHFIELD
12 and 16 INCH
HEAVY DUTY
HAND JOINTER



FOR PROLONGED TABLE ACCURACY

THE NORTHFIELD Heavy Duty Hand Jointer is intended for production work where accuracy and fine quality are essential. The legs are placed so as not to obstruct the feet of the operator. Weight is well distributed for balance and smooth running. Tables are of box form construction, cored the full length, machined and hand scraped for accuracy.

The NORTHFIELD Guarantee
We guarantee perfect satisfaction to anyone who may purchase our machines, and if any reasonable exceptions are taken to their good performance, they may be returned at our expense.

HIGH SPEED, PRECISION
- Band Saws
- Surfacers
- Wood Shapers
- Jointers
- Saw Tables
- Mortisers (Chain & Hollow Chisel)
- Universal Woodworkers

WRITE TODAY FOR MORE INFORMATION

Northfield FOUNDRY & MACHINE CO.
★ ★ ★ NORTHFIELD, MINNESOTA, U.S.A.

Carbide Tipped Tools

This 16-page permanent-reference unit catalogs such Parco tool developments as carbide-tipped spiral plane blades and three new special-application plastic trimmers. Five extra sizes of spiral router bits, and a hardwood lip addition to O.C.E. door lip cutter sets are included in these developments.

Full tool specifications and list prices are shown throughout the catalog.

Copies are available from Price and Rutzebeck, P. O. Box 30, Hayward, California.

Use postpaid card. Circle No. 16

Portable Nailers and Pinners

This 6-page folder displays the pneumatic and mallet drive model of Spotnailers. They are pictured in use with fasteners ⅜" to 1½" plus a chart which shows which fasteners are used with each gun.

Spotnails, Inc., 1527 Lyons Street, Evanston, Illinois.

Use postpaid card. Circle No. 17

Geared Flexible Couplings

This 12-page booklet details pertinent application and selection data for couplings with maximum bores ranging up to 7" and ratings from 2½ to 572 h.p. per 100 r.p.m.

These geared flexible couplings provide an extra large bore capacity in proportion to outside diameter. The housing halves are of forged steel solidly joined by hardened and ground socket head through bolts with lock nuts, arranged for one-tool assembly. Effective quad-ring hub seals retain lubricant and exclude dust, water or other destructive matter.

For further information ask for booklet No. 2775 "Geared Flexible Coup-

lings" from the Link-Belt Company, Dept. PR, Prudential Plaza, Chicago 1, Illinois.

Use postpaid card. Circle No. 18

Carbide Cutting Tools

This 8-page booklet illustrates solid carbide tools. Some of the tools mentioned are: saw tips, shaper blades, planer knives and router bit blanks. The tools are used for planing and shaping of soft and hard woods, hardboard, chip board, acoustic tile, insulating board, plywood and other specialty products made by the woodworking industry.

Ask for Bulletin No. WK-100, Kennametal Incorporated, Latrobe, Pennsylvania.

Use postpaid card. Circle No. 19

Film "House of a Lifetime"

This 13-min. sound color television film, "House of a Lifetime" has been released by the Motion Picture Unit of Virginia Polytechnic Institute.

The improved construction of framed buildings is demonstrated in this educational film which is addressed to the general public as well as to architects, builders, materials suppliers, and others connected with the building industry.

Order from the Virginia Polytechnic Institute Extension Film Library, Blacksburg, Virginia.

Indulin

This bulletin describes Indulin, an extender for phenolic and furan resins. It imparts highly desirable properties and effects substantial savings in production of paper sheet laminates, plywood adhesives, fiberglass mats, as well as wood particle and composition boards.

Ask for Bulletin No. 111 from Polychemicals Division, West Virginia Pulp and Paper Company, Charleston A, South Carolina.

Use postpaid card. Circle No. 20

Fire Protection System

This 8-page bulletin illustrates ways of making sure that fire fighting equipment is in good order. The bulletin stresses the importance of adequate and correct equipment with examples of unnecessary loss due to poor equipment. Illustrations are given explaining the correct technique in installing fire fighting equipment.

Factory Mutual Engineering Division, Associated Factory Mutual Fire Insurance Companies, 1151 Boston-Providence Turnpike, Norwood, Mass.

Use postpaid card. Circle No. 21

Shaper

This 4-page folder illustrates hand and air operated shapers for band, gang and circular saws. The last page contains a shaper selector giving the necessary specifications and other valuable information needed to select the correct shaper.

Each shaper is illustrated with complete information about it.

Armstrong Manufacturing Company, 2135 N. W. 21st Avenue, Portland 8, Oregon.

Use postpaid card. Circle No. 22

Conveyors and Ovens

This 16-page booklet contains sections describing batch type ovens, conveyor type ovens, various air recirculating and heating systems available, and control and safety equipment.

The bulletin pictures several continuous conveyor-type ovens for baking a wide variety of things such as wood panels.

Copies of Bulletin 157 are available from Young Brothers Company, Department B-4, 1831 Columbus Road, Cleveland 13, Ohio.

Use postpaid card. Circle No. 23

Flo-Pilot Valves

This 8-page booklet states that these valves are available in five basic models: ball cam, palm button, hand lever, locking hand lever and mechanical link clevis. These valves are ¼" pipe size for two or three way air operation to 150 psi. They are used for remote control of master valves, directional control of small single acting cylinders, and for shut-off.

Catalog No. 262 is available from the Hanna Engineering Works, 1765 Elston Ave., Chicago 22, Illinois.

Use postpaid card. Circle No. 24

FIG. 602

FIG. 603

Whether it is . . .

HEAVY PRODUCTION OF PICTURE WINDOW SASH STOCK OR OVERHEAD GARAGE DOOR RAILS . . .

BADGER **CLAMP TYPE HEADS**

. . . are the answer!

The Badger Clamp Type Cutterhead is a high production cutting tool. Fool-proof design; rugged construction with hardened clamps; and high speed steel milled-to-pattern bits, **ground to your precise pattern** means basically one thing: long, money-making runs of your standard patterns.

The pair of Badger Clamp Type Heads shown are equipped with eight bits operating in a 7½" cutting circle (9" swing circle) with the bits of staggered design to "break up" the cut. The head in Fig. 602 has four bits to cut the profile while the other four cut the deep rabbet. Both sets of bits are ground back at an angle to provide ample clearance to avoid burning and produce a clean cut. Bits are adjusted laterally to control the width of pattern as they are sharpened.

The two sets of four bits on the head in Fig. 603 were designed to produce variations of the angular rabbeted pattern shown. Depth of rabbet can be varied by moving one set of bits in or out as the case requires. Some variations of the depth of cut can also be obtained by lateral adjustment of the bits.

Badger Clamp Type Heads are described in Bulletin 250. They should be used whenever possible for heavy production runs, for deep patterns, for high spindle speeds. Lateral (or side) adjustment of the bits is limited. Only relatively narrow patterns are usually handled. Milled-to-pattern bits can be supplied in either high speed steel or carbide tipped.

If you have a high production machining job to do, send a sketch or a sample on to WISCONSIN today! Badger Engineers will gladly make recommendations that will increase your production with the **least long-range cutterhead expense!**

© W.K.W. 1957

SEND FOR *Free* CLAMP TYPE HEAD BULLETIN •250

Engineers to the Woodworking Industry

NAME_____

FIRM_____

ADDRESS_____

CITY_____ STATE_____

WISCONSIN KNIFE WORKS

BELOIT, WISCONSIN

LESTER pianos

are finished on a COMPLETE DE BURGH FINISHING SYSTEM

SUPERB FINISH is paramount for pianos in keeping with their styling and with their musical excellence. That's why the Lester Piano Company uses a DeBurgh System for its complete piano finishing operation. Lester, like other successful manufacturers, knows that Koch-engineered, Koch-built DeBurgh systems finish their product better while saving them time, money, material and labor.

DESIGNING ENGINEERING
FABRICATION SUPERVISION

Our expert engineers will make an analysis of your furniture finishing operation. Call us . . . no obligation! Write for booklet "DeBurgh Furniture Conveyor." Learn how you can . . .

- cut labor costs 50% and more
- saves 35% floor space
- increase production
- improve quality of your product

GEORGE KOCH SONS, INC.
Evansville 4, Indiana
CHICAGO OFFICE, Merchandise Mart

DESIGNED BY A FURNITURE MAN FOR FURNITURE MEN

finishing section

- Trend toward machine rather than hand finishing continues. One manufacturer has recently placed a 12" belt sander on the market which is claimed to replace a variety of hand operations.

- Read the field report written by Darrell Ward, page 67. U.S. Plywood Corp. has setup a completely automated finishing line where a panel is finished in 97 minutes. Electronic equipment, new machinery and a well planned layout have cut labor and time costs.

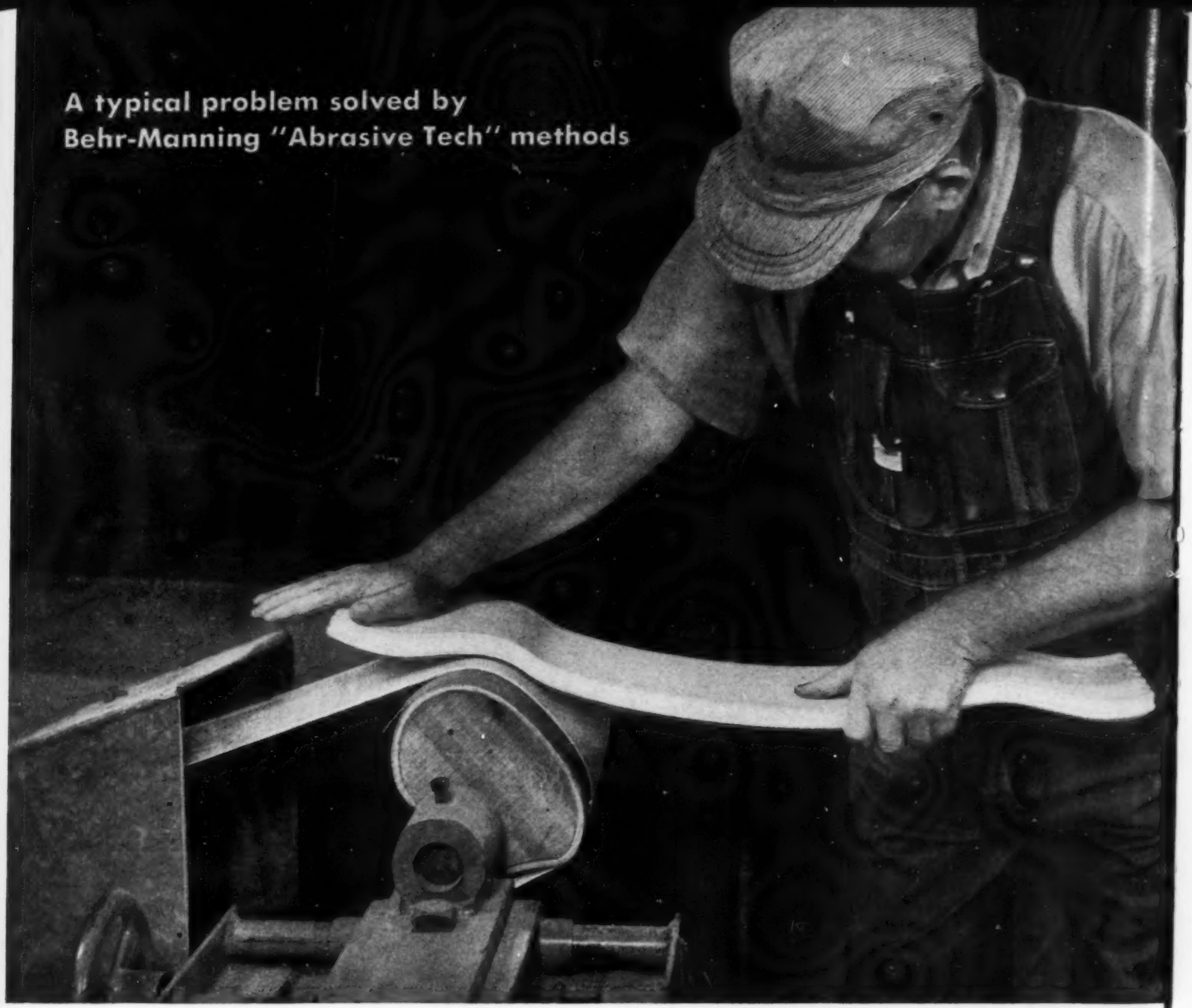
- Airless spraying is another technique receiving widespread consideration. Prairie Schooner Inc. has applied this technique to trailer manufacture.

- Important problem which must be solved by prefab manufacturers relates to finishing. How can consumer grain be given wider range of choice? How can matched plywood panels be installed in the same room efficiently?

- Also in this issue, though not in this section, is an article on rollcoating plywood panels by a prefab manufacturer. This article appears on page 58.

- Automated Finishing Operation at U. S. Plywood's Orangeburg Plant

- Trailer Manufacturer Tries Airless Spraying



Using 100-J (2/0) Garnet cloth belt with a stationary nose block sander to cut down serpentine drawer fronts.

New method speeds production and eliminates rotary marks on serpentine drawer fronts

The combination of a contour block and a fast cutting Behr-Manning abrasive belt increased production 25%. This is another example where extensive research and improved manufacturing techniques save time and material. If you have a production or finishing problem, just phone the nearest Behr-Manning office for a date.

There are 17 "Abrasive Tech" Methods Rooms well-equipped with the latest equipment of all manufacturers (Behr-Manning does not make or sell machines) located at: Atlanta, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Detroit, Grand Rapids, High Point, Indianapolis, Los Angeles, Teterboro, Camden, San Francisco, Seattle, St. Louis, and Brantford Canada. Main office and plant: Troy, N.Y. For Export: Norton Behr-Manning Overseas Inc., Troy, N.Y., U.S.A.

BEHR-MANNING CO.

TROY, N. Y.

A DIVISION OF NORTON COMPANY

NORTON ABRASIVES

BEHR-MANNING PRODUCTS: Coated Abrasives • Sharpening Stones • Pressure-Sensitive Tapes
NORTON PRODUCTS: Abrasives • Grinding Wheels • Grinding Machines • Refractories

BEHR-MANNING ®

Darrell Ward, field editor, arrives at the Orangeburg, S.C., plant of the U. S. Plywood Corp. for an exclusive story on this automated prefinishing operation. Ward (right) is greeted by Sales Manager Carl Cease.

Automated Production of Prefinished Plywood Panels

By Darrell Ward, *Field Editor*

The U.S. Plywood Corporation has expanded facilities at the Orangeburg, South Carolina plant, providing for a huge boost in production capacity and an almost unbelievably high quality specification for prefinished plywood. New facilities have boosted potential production from a previous 15,000 or 20,000 sq. ft. per day to 50,000 sq. ft. with a completely automated, quality controlled line! The goal for the coming year is 13,200,000 sq. ft. of prefinished plywood in the various finishes now produced.

It is generally conceded that plywood wall panels are far more durable than any other common material or fabric in popular use. But, the extraordinarily high quality finish being produced on U.S.P. panels is designed to exceed any normal use or abuse one might anticipate for this kind of product.

Standard wood panels run on the line include cherry, birch, African mahogany, nakora, limba, walnut, oak, korina, knotty pine, samara, and Philippine mahogany. Most of these woods are veneered in four styles: standard, v-plank, colonial v-plank, and Plankweld. The standard style is a full width smooth panel. V-plank is a v-grooved veneer in a random matched random plank width effect. Colonial v-plank is similar with occasional "plank ends" and simulated pegs. Plankweld is a 16¾" wide panel grooved for overlapping joints at stud centers. Metal clips are supplied for invisible mounting.

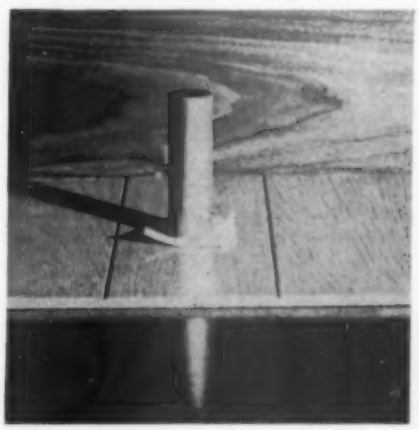
A key to the increased production and improved quality of product becomes evident when you see the new 40,000-square-foot, one-floor layout in which the conveyor system is controlled by an "electronic brain." The 82 cells of the electronic controls govern each step in the 784' line on which 320 panels are moving at one time. It takes 97 minutes for a panel to travel from white goods to packaging, with four panels arriving at the packaging bench every minute.

The finish applied by U.S.P. is a nitro-cellulose lacquer designed to pass Government specification MIL-F-002319A (QMC), a high quality specification designed primarily for institutional furniture. Features of the specification cover a print test, chemical resistance test, cold check resistance test, alcohol resistance test, and boiling water test.

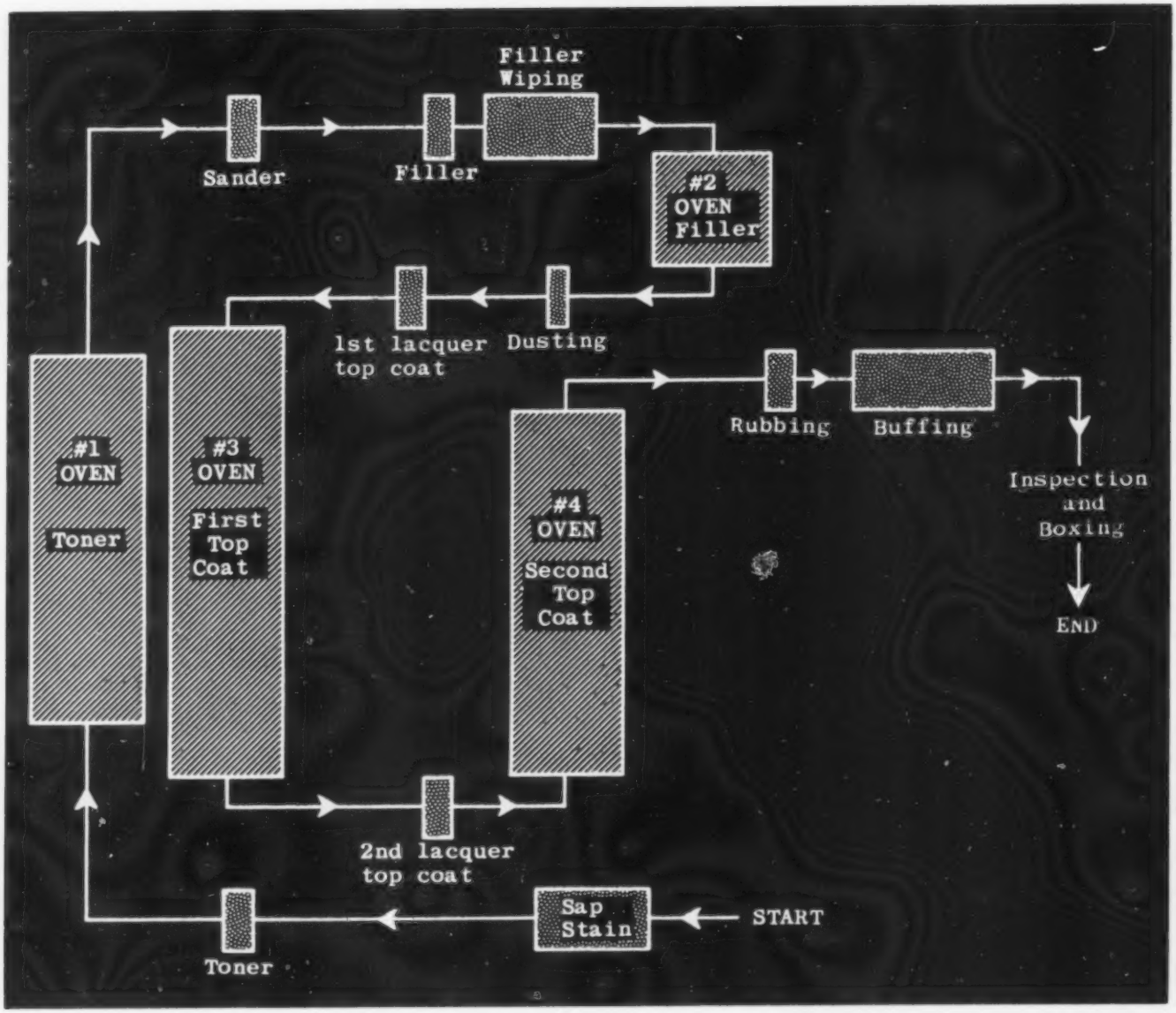
Although it is not likely that a homeowner or the occupant of a wood paneled office will spill household chemicals, liquor or boiling water on his walls, he could do all of these things and not find any signs of damage to his Weldwood walls! The U.S.P. panels have already been tested for resistance against damage from most things which are less lethal than an ice pick or a hatchet.

For instance, the print test proves that the finish will not show any impression when a pressure of 2 p.s.i. is applied through a piece of hard textured canvas with a steel bar. If the plywood finish picks up lint or shows any impression of the weave of the cloth, that piece has failed to pass the test.

People generally will not splash vinegar, lemon juice, orange juice, or salted butter on the wall, but, they could without concern. The



Test given panels at Orangeburg would surprise an outside observer. Heavy objects are laid on the surface—the finish shall not print when tested under a pressure of 2 lbs. per square inch.



Steps in the automated prefinishing operation at the Orangeburg, S.C. plant of the U. S. Plywood Corporation. Refer to this layout as you read the story and accompanying illustrations.

chemical resistance test has demonstrated that these household chemicals do not damage the prefinished panels.

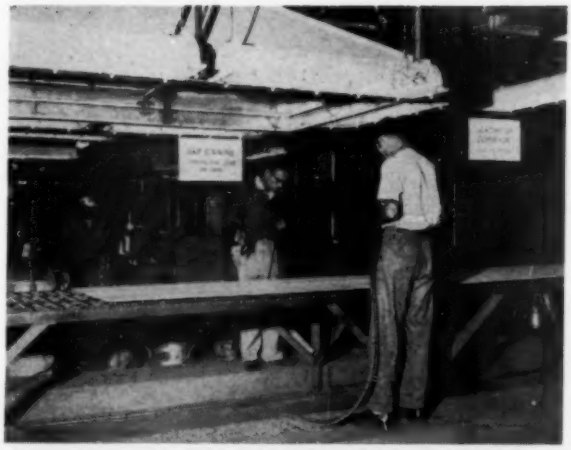
The cold check resistance test requires exposure to extremes of temperature variation: one hour at 120°F. and one hour at 20° below zero. After a minimum of 10 such 2-hour cycles, the plywood must show no signs of checking. This eliminates all possibility of damage which might occur in a building, occupied or not, and probably protects the consumer from defective panels even if a builder works under all possible weather conditions on the job site.

The alcohol resistance test calls for 18 hours with the surface remaining under a puddle of 50% pure ethyl alcohol after which time it must show no after effects. This means that bonded liquor could be spilled on a panel for a night and half a day before it is wiped clean, yet the panel will remain in perfect condition.

The boiling water test is made by pouring 25 cc. of boiling water on the finished surface and allowing it to cool to room temperature. If there is softening or spotting of any kind, the panel is rejected.

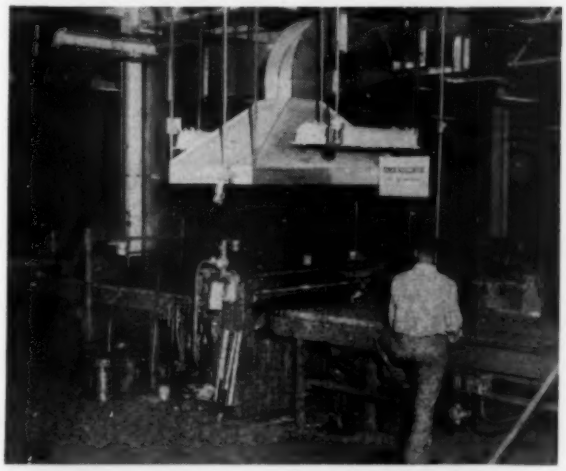
Mr. B. P. Adams, Jr., manager of the operation at Orangeburg, said these tests may appear to be more vigorous than necessary for consumer products, but when panels are made to these specifications, the goal for U.S.P. panels is realized. That goal is a prefinished panel which combines beauty, durability, and easy maintenance. When the merchandise can be demonstrated with such dramatic tests to prove its quality, sales promotion then is built upon something more substantial than imagined ambitions of production people or vague claims filled with meaningless adjectives by salesmen.

Any doubt about this can be dispelled with statistics. United States Plywood first introduced prefinished plywood panels in 1950. After more than 20,000,000 square feet had been distributed, there has not been one complaint about quality of finish. That record, and the increased demand for merchandise which it has inspired, enabled the company to invest $750,000 in the new plant. Here is a run-down on what we saw when the plant was in full production with 14



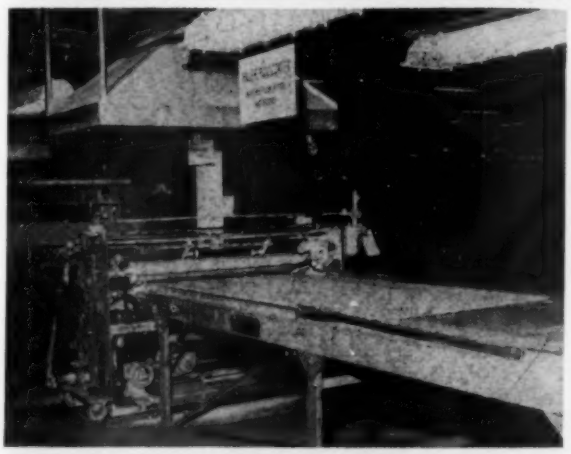
1 Operators work on both sides of the panel, each doing one half of the panel.

2 All panels are backcoated on this Gasway rollcoater. This helps to equalize stress and minimize absorption of moisture.

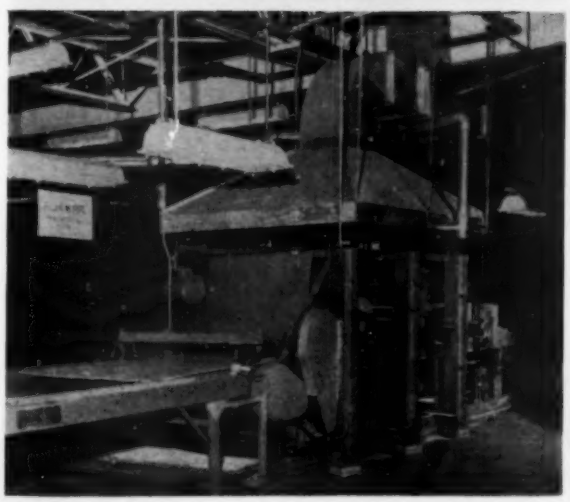


3 Toner rollcoater which seals the color and makes it uniform. Each rollcoater is equipped with rollers for quick removal and replacement to provide for color changes where color is a factor.

4 The toner sander is a Timesaver 50" machine which is equipped with a dusting brush to remove dust and smooth the surface for a more uniform filler application.



5 Gasway rollcoater for applying filler. These machines provide for an efficient and uniform application.

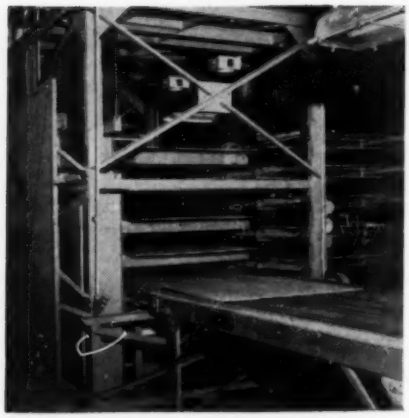


6 By special arrangement of brushes on this Timesaver equipment, and the pressure applied, filler wiping is done immediately after application.

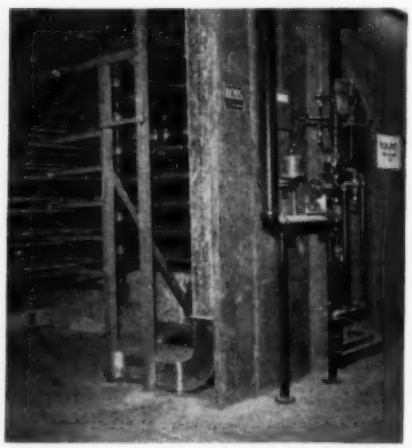
workers under ordinary supervision. At this point, it may be kept in mind we are discussing only the panel prefinishing plant, not plywood manufacturing which is done in adjoining buildings.

The finishing process begins with panels being laid on the line horizontally and "sap stained" to harmonize the natural wood colors with any slight discolorations from sapwood.

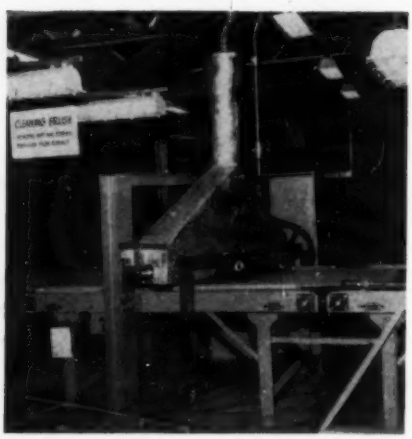
Next comes a single lacquer type of back coating applied by a Gasway rollcoater. Back coating is a necessity for stabilizing all panels which are to carry a finish on the



7 *Elevator at oven No. 2 has five levels which successfully lift five panels, one at a time, and discharge all five, at one time, onto the five levels of conveyor belts in the oven.*

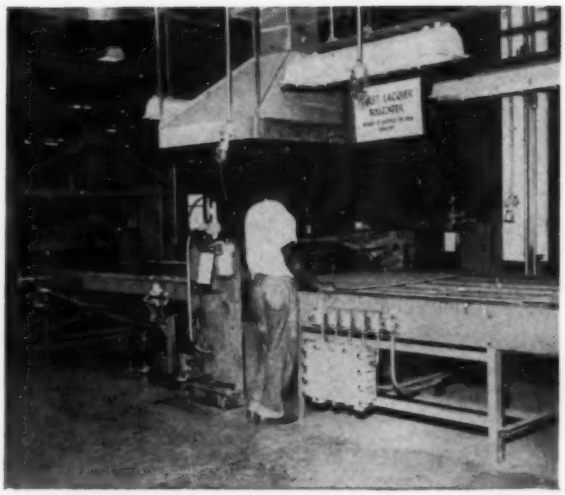


8 *At the discharge end of the filler drying oven we can see details of the fire control system. This soaks down everything in the oven should fire break out. Spray nozzles are attached to short "T's" visible on the large vertical pipe just inside the oven.*



9 *Filled panels are dusted at this station by a single rotary brush Timesaver machine. Panels then move on for the first coat of lacquer.*

10 *This rollcoater applies first coat of lacquer. The control buttons to the right of the operator are part of the electronic equipment which enables the worker at this position to manually stop any operations behind him on the line in case of accident.*



11 *First lacquer drying oven where automatic controls precisely control temperatures and humidity inside the oven. This feature probably offsets many problems encountered in funriture factories where weather conditions cause problems.*

face. *United States Plywood unconditionally guarantees a panel for the life of the house in which it is installed.*

The panel moves from there on a Buschman conveyor to another rollcoater which applies toner. At stations where color may be changed, as in toning, there are a number of rollcoaters mounted on casters for quick changes to suit production schedules. Each is loaded with a different color. There is no need for emptying and cleaning up each time the line is changed from one type of finish to another.

Rollcoating of various finishing materials has been used extensively in other industries, but United States Plywood claims to be the first to have introduced this process to plywood finishing.

Beyond the toner station is an automatic transfer mechanism which transports the panels automatically at right angles to the first line. The transfer is controlled by electric eyes and stop switches to prevent piling up at this corner. One circuit connects back to the toner rollcoater, and another circuit works forward toward the oven conveyor. The transfer will not work unless material has moved forward in the oven and a freshly toned panel from the toner arrives

12 *Second lacquer rollcoater which applies final lacquer topcoat. There is no sanding between first lacquer drying and second lacquer rollcoating.*

Increase Sanding Production and Cut Costs at the Same Time!

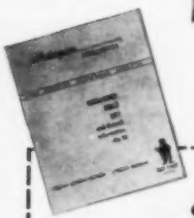
You get faster, smoother finishing with MICHIGAN ABRASIVES . . . and longer "like new" performance, too!

In less than a day, in your own plant, Michigan **RED COAT** brand coated abrasives will show you performance that can mean greater production, reduced costs and better profits!

All **RED COAT** belts, sheets and discs are sharper to begin with . . . more resistant to loading! They give you the finish you want on far more pieces before they must be replaced—surfaces free of fuzz and wiry wood fibers, even on hardwoods with abnormal moisture content!

You may be able to make an important improvement in your operation . . . *cut cost . . . increase production and strengthen profits!* You can find out with one simple test. Try the **RED COAT** Brand abrasive recommended by your Michigan representative. You'll never know how much more efficient your finishing operation can be until you do! Call your Michigan man today or send for free catalog and he will call you for an appointment. Either way you will get full information on the complete line of Michigan belts, sheets, discs and specialties. Remember, you can't buy better performance!

MICHIGAN ABRASIVE CO.
Manufacturers of *"The Humidity-Controlled Abrasive"*
11910 E. 8-MILE ROAD • DETROIT 5, MICHIGAN



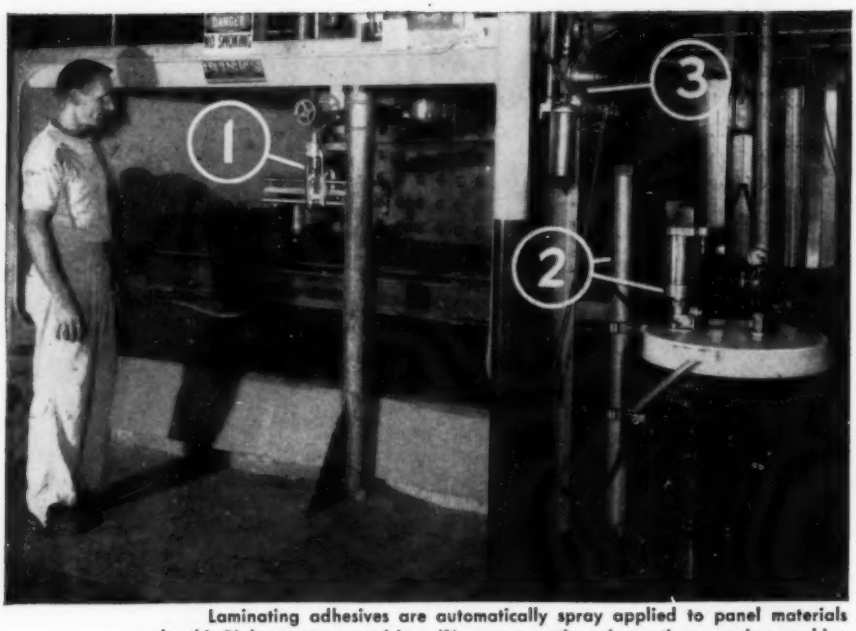
Mail Today

O.K., give me the dope on Michigan Abrasives!
☐ Send your Catalog ☐ Have representative call.

Name_____
Title_____
Firm_____
Address_____
City_____ Zone_____ State_____

RED COAT BRAND

Michigan ® ABRASIVES



Laminating adhesives are automatically spray applied to panel materials by this Binks system comprising: (1) an automatic reciprocating spraying machine in conveyorized spray booth, (2) a material handling pump and pump elevator, and (3) an oil and water extractor and accessories.

at Panelfab Products, Inc., North Miami, Fla...

Automatic spraying of adhesives saves material...assures even bond

Mr. Carl M. Kromp, plant manager at Panelfab reports:

Perfect bond—every time

"Since installing a Binks automatic reciprocating spraying machine for the application of adhesives to our panels, we get even coverage. There are no skips or thin spots to cause bond failure. Perfect bond is a must as we make structural building panels by laminating facing materials such as hardboard and aluminum sheets to a honeycomb core."

Improved production

"Automatic control over adhesive application prevents waste too. Adhesive is pumped direct from original shipping drums...no need to transfer material from one container to another. An elevator lifts the pump for easy exchange of drums. Conveyorized spray booth and Binks automatic reciprocating machine maintains steady production rate – eliminates fatigue element associated with manual methods."

As was the case with Panelfab, no matter what liquid or semi-liquid you may now be applying in your production process—it will pay you to talk to Binks.

Free analysis and engineering help:

If you would like to know what production rates or costs you could obtain with Binks spraying systems, Binks research department will run an actual test on your products and give you a detailed report. *No obligation*—call your Binks Branch Office or write direct.

Ask about our spray painting school
Open to all...NO TUITION...Covers all phases

692

Binks
EVERYTHING FOR SPRAY PAINTING

SPRAY GUNS

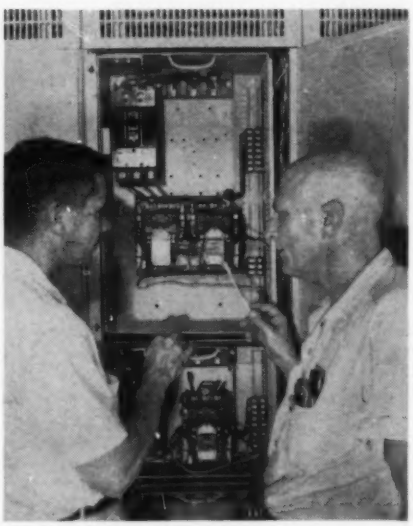
AIR COMPRESSORS

FLUID TANKS

Binks Manufacturing Company
3116-34 West Carroll Ave. Chicago 12, Illinois

REPRESENTATIVES IN PRINCIPAL U.S. & CANADIAN CITIES • SEE YOUR CLASSIFIED DIRECTORY

13 *Westinghouse motor control as seen from inside the electronic brain control room. This view shows some of the 82 cells—somewhat less than one-half of the total installation, part of which is back-to-back in the same room.*

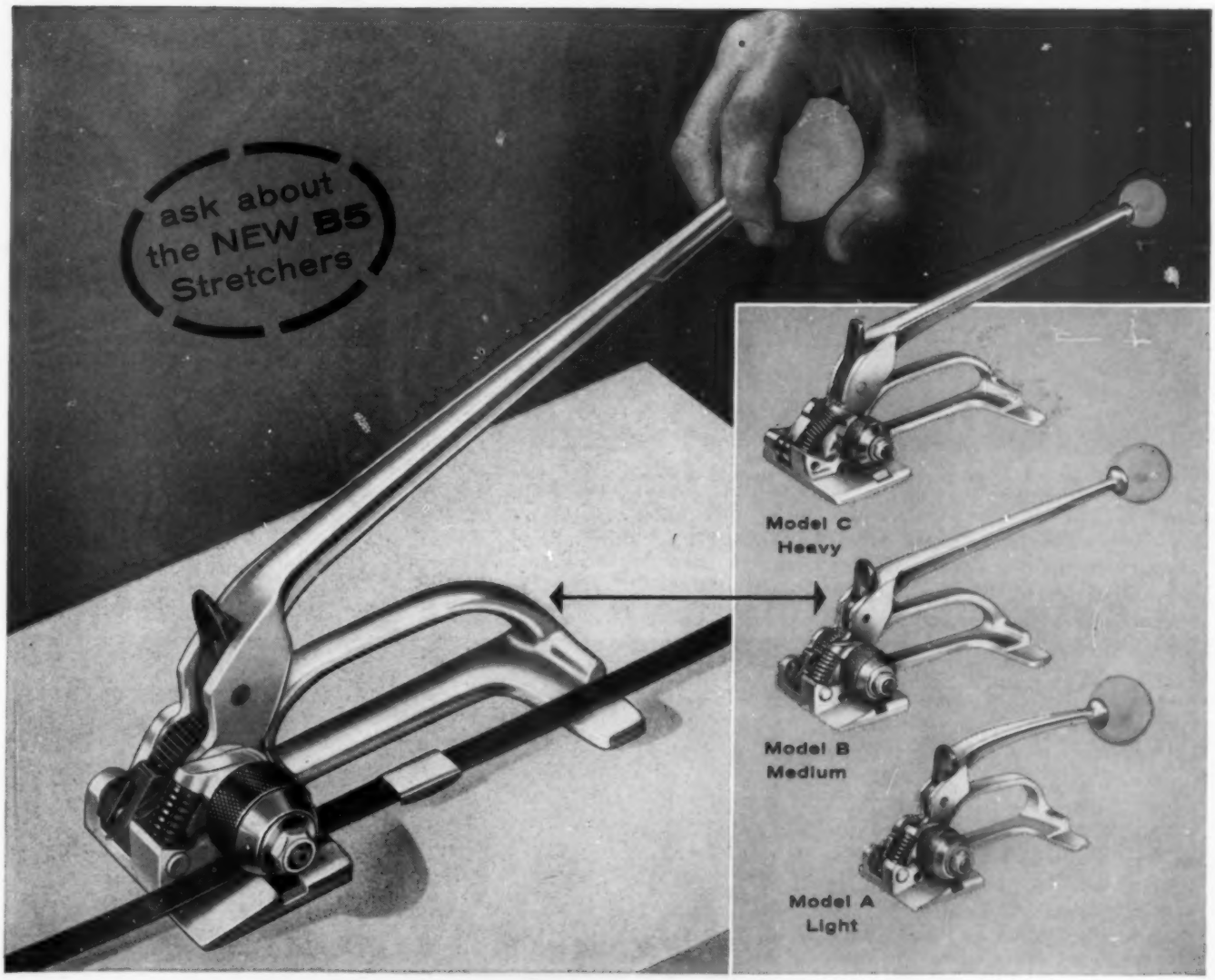


14 *B. P. Adams, Jr., left, head of the Prefinishing Div., and E. F. Oeffinger, finishing manager, examine one of 82 cells. Each cell automatically controls a specific stage in the 97-minute cycle.*

at the corner. Accidental jamming or any fouled action at any point will stop the entire line automatically because of interlocking circuits in the motor control system built by Westinghouse.

The first of the Ross ovens bakes the toner to a bone hard surface for drum sanding on a Timesaver machine.

Another rollcoater applies filler which is promptly wiped on another Timesaver employing revolving brushes.



Ask your AIM* about the brand new B5 stretchers

Acme Idea tensioning tools for steel strapping

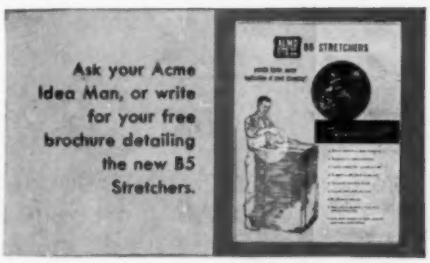
ACME STEEL COMPANY now offers the new B5 Stretchers . . . the most versatile Idea strapping tools available to industry.

The B5 Stretchers are rugged but without excess weight and properly balanced. They can be used left or right handed, with the strapping dispenser either ahead or behind the operator for standard or reverse loop applications.

The design of the new B5 Stretchers permits fast, easy entry and alignment of the strap loop ready for tensioning. And the B5 Stretchers can be used to apply strapping in any direction, with the same ease of operation.

The arrangement of the rotary gripping dog permits continuous, unlimited take-up, quick release after strapping is tensioned. B5 handles can be positioned quickly for maximum leverage in confined areas.

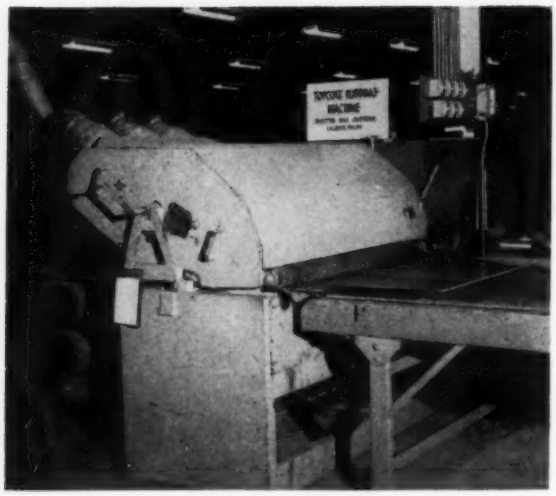
B5 Stretchers come in three sizes—Model A for light, Model B for Medium and Model C for heavy applications.



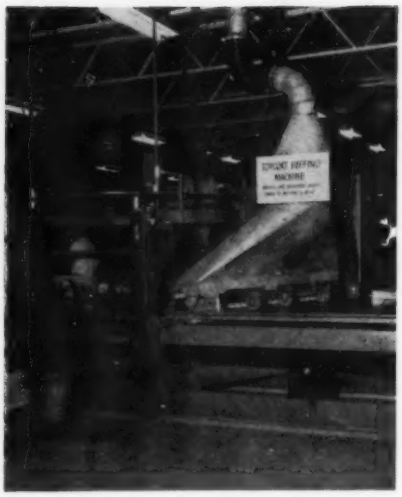
***Ask your Acme Idea Man** about the new B5 Stretchers today. Contact him at the nearest Acme Steel office, or write: Dept. WES-127, Acme Steel Products Division, Acme Steel Company, Chicago 27, Illinois.

In Canada, Acme Steel Company of Canada, Ltd., 743 Warden Avenue, Toronto 13, Ontario.

ACME STEEL **STEEL STRAPPING**



14 *Top coat rubbing machine which smooths and makes uniform the lacquer finish.*

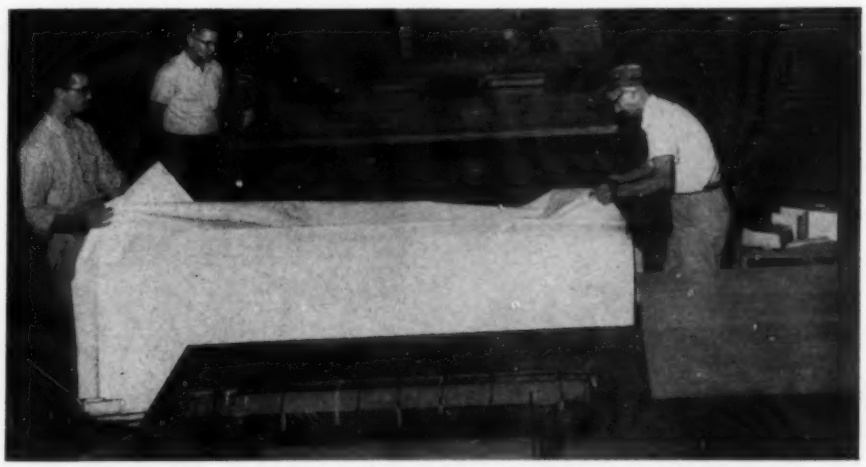


15 *Top coat buffing machine which waxes and burnishes the laquer finish to produce a very uniform satin sheen on the final product. This completes the finishing operation.*

Oven Number 2 is a relatively short unit, but there is a time delay in filler drying. There is an elevator with five levels at this oven. The elevator lifts five panels, one at a time as they arrive from the filler conveyor, automatically indexing each platform to the proper level when a panel rides in and touches a switch. When the elevator has lifted all five panels, it discharges all of them at one time onto the five conveyors in the oven. Meanwhile, another elevator at the output end of the oven removes dried panels in a reverse manner, transferring them to the lacquer line conveyor. Both elevators make a right angle turn in the conveyor line similar to regular transfer mechanisms, therefore the oven occupies the position of the bend in a "U"-shaped layout of the conveyor line.

Filled panels are dusted, then moved to another rollcoater for first lacquer. A third oven bakes this dry for a similar second lacquer coat to be applied in the same manner. Second coat drying is done in oven number 4, and the panel moves out for rubbing and buffing.

As panels are inspected off the line, they are lifted in bundles of



16 *Sheets are fed automatically from conveyor line to inspection table where first two workers check the panel surface and reject any questionable panels. The accepted panels are laid up on packing conveyor face-to-face with sheets of white drugstore bond paper between. The bundle of six panels is then passed on to the workers in the background. These men proceed to complete packaging. Care is taken that there be no damage to the completed panels during shipping.*

ReNew GIVES NEW LIFE TO SANDPAPER AND **CUTS SANDING COST 50%**

Keep your sandpaper cutting for you with ReNew. Apply . . . let it dissolve the pitch or resin . . . then brush it off with a scrubbing brush. It's so easy and quick and makes your sandpaper last at least 3 times as long.

ReNew increases sanding machine efficiency . . . paper lasts longer . . . less changes necessary. ReNew is non-inflammable.

We also have a complete line of maintenance paints. Write for prices.

MOLINE PAINT MFG. CO.
MOLINE ILLINOIS

six to the packaging bench. Rejects are set aside on trucks and the approved panels are cartoned with three pairs face to face. Sheets of drug store bond, a heavy grade of smooth white paper, is interlaid between face sides of panels to protect the finish in shipping. The company had tried a brown kraft paper, but this contained some abrasive material which scratched the finish.

The prefinishing system was designed by E. F. Oeffinger, finishing manager for the plant. Ross built the four ovens to fit the layout specifications and Bushman built the conveyors, transfer mechanisms and elevators to serve each operation as planned by Mr. Oeffinger.

United States Plywood promotes a tie-in package deal for the consumer to get the utmost in appearance from an installation. Weldwood contact cement is recommended for bonding the panels to walls since this eliminates the need for nails or screws which deface an otherwise decorative surface. The contact cement method of dry bonding is applicable to installations by any building contractor or do-it-yourself customers.

The company suggests a minimum maintenance program to keep the prefinished plywood panels in top condition. Basically, a damp cloth wiping followed by a wax polish is all that is necessary. If the surface becomes dingy with accumulated dust over a long period of time, an emulsion cream wax is recommended. Bon-Ami is suggested for pencil marks, smoke discoloration or very heavily soiled areas.

Promotion literature includes colorful brochures displaying the different styles of panels, types of wood and color of finishes; plus full descriptions and architectural details for any kind of installation.

Thus, United States Plywood has demonstrated an obvious belief in the future of prefinished panels. They have set up the new plant to get three times the volume of former production with the latest word in control mechanisms, and are turning out a package designed to catch the eye of any consumer who will look in their direction.

17 *Other end of packing conveyor. Here two more workers make up cartons for the stack of panels which rides off the inspecting conveyor. Packages of six are sealed with gummed tape ready for shipment. A fork lift truck takes the packages to the shipping area.*

AMERICA'S FASTEST IRREGULAR SHAPE SANDER

THE NEW PEARSON "Model "A"

SAVES 1 OR 2 OPERATIONS

Standard equipment includes 7 metal heads and 14 cushions made of finest grade rubber. Length of cushions range from ¾" to 4"; outside diameters, 3¼" to 7". Equipped with ½ h.p. dustproof motor.

Will not disfigure details! Many plants report this efficient sander saves 60% to 80% on sandcloth! Sands one or more stepdowns at same time; sands inside radii of circles and very flat tapered moulding. With the Pearson Belt Attachment, shown below, this model can be converted to an all-purpose sander at small cost!

TABLE BELT ATTACHMENT FOR PEARSON MODEL A SANDER

WE SELL DIRECT!

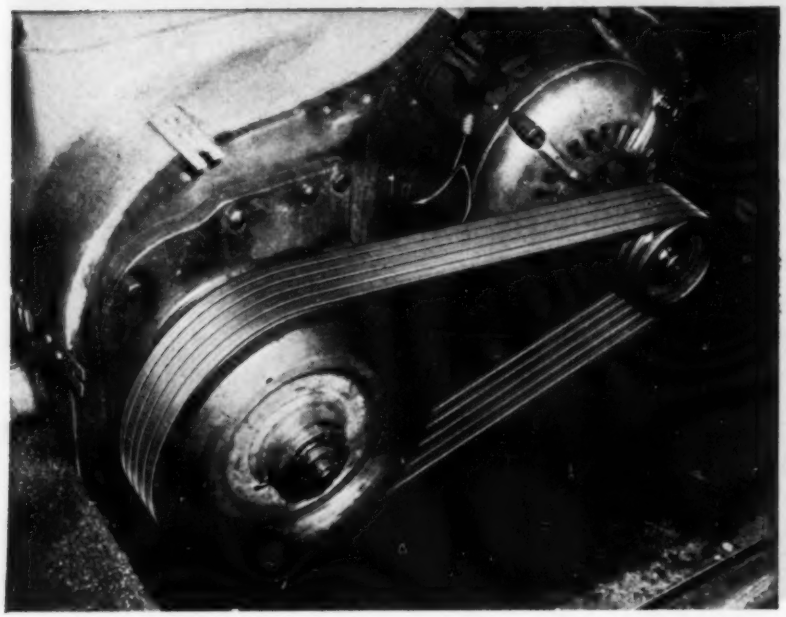
This enables us to personally instruct your operator to get maximum efficiency from the machine.

This table belt attachment enables you to do ANY sanding that can be done with a ½ h.p., 3 phase motor! Can be attached or detached in only 3 minutes! Our special hand slide babbitt form blocks can be used for straight mouldings. Model "A" Sander and attachment sold together or separately. Write for complete information.

We Also Manufacture Block & Edge Sanders, Scroll and Drum Sanders

PEARSON SANDING MACHINE CO., INC.
HIGH POINT, NORTH CAROLINA

CONCAVE SIDES make V-belts last longer

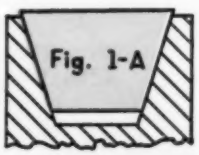


***See for yourself* why the concave sides (Fig. 1) of a Gates V-Belt greatly lengthen its life. Just do this:**

Bend a Gates belt and feel the sides. Note how these precisely engineered concave sides *fill out* on the bend and *become straight*. Thus a Gates belt grips the sheave groove evenly (Fig. 1-A) and wear is distributed uniformly across each side of the belt. That means longer belt life; lower costs.

Make the same test with a straight-sided belt (Fig. 2) and see what happens. The sides bulge out on the bend (Fig. 2-A) concentrating the wear at points shown by arrows.

For longer belt life...lower belt costs, specify the V-belt with Concave sides—Gates Vulco Rope...readily available from nearby distributor stocks.



TPA 151

World's Largest Maker of V-Belts

The Gates Rubber Company

DENVER, COLORADO

There are Gates Engineering Offices and Distributor Stocks in all industrial centers of the United States and in 70 other countries throughout the world.

Gates VULCO ROPE Drives

Send Today for your FREE TEN-DAY TRIAL

of the

Lumber Calculator's Hand Book

This "time-saving, pocket-size" hand book helps you

CHECK and CALCULATE LUMBER QUICKLY and ACCURATELY!

It's SIMPLE and EASY TO USE . . . costly mistakes are eliminated.

Leading lumber handlers across the nation use the LUMBER CALCULATOR'S HAND BOOK regularly, relying on it for speed and accuracy in checking and calculating lumber . . . Bridgers Lumber Co., of Tuscaloosa, writes, as do many, **"We have worn out several of your** LUMBER Calculator's Hand Books. **Please send us four new copies."** Once you've used it, you'll never be without your copy.

SEND TODAY FOR YOUR FREE TEN-DAY TRIAL . . . if you're not completely satisfied, return your FREE TRIAL COPY with no obligation.

You may either use this order form or use the Handy "Action Card" inside the back cover.

Hitchcock Publishing Company
Industrial Services Division
222 E. Willow Ave. Wheaton, Illinois

Please send my FREE TEN-DAY TRIAL copy of the LUMBER CALCULATOR'S HAND BOOK. If I do not return it within 10 days, you may bill me the regular charge of $3.00.

Name.....

Title.....

Company.....

Street.....

City ..... Zone..... State.....

Mobile Home Manufacturer Tries Airless Spraying

Installed just a year ago, airless spray for application of semi-gloss varnish has helped Prairie Schooner, Inc. cut labor costs and finishing time.

The prairie schooners now being manufactured at Elkhart, Indiana, are different in every way from the original vehicles by this name which traversed our country 100 years ago! Today's schooners ride more easily, are much more attractive and are literally "a home." This story is about the finishing techniques used at Prairie Schooner, Inc., where mobile homes are built.

Prairie Schooner, Inc., has been building quality mobile homes since 1936. This firm, one of the oldest and largest manufacturers of mobile homes, has a number of models in its line. Mobile homes are made here in 8′ widths with lengths of 29′, 35′ and 40′. These models are available with one or two bedrooms. Prairie Schooner also makes a 10′ wide model, 40′ or 48′ long, with one or two bedrooms. A 10′ wide, 48′ long model is available which has three bedrooms. New to the line is the Homelike model with an exterior residential finish of wood and steel paneling in a 40′ length and also in a 48′ length, with one or two bedrooms.

Management of the corporation is constantly on the alert for new and better ways of doing things. This is true of the woodworking operations which include cabinetmaking, and also of the finishing operations. In November, 1956, a new finishing system was installed.

The Bede airless spray system, introduced a year ago, is used for interior finishing only. Varnish is used in the system for finishing paneling, built-ins, chests, tables, and other interior furniture. A No. 600 hot spray, semi-gloss varnish is used at 180° with 550 lbs. of pressure. No solvent is added.

Operator is spraying ceiling. Note that he wears mask and that both windows have been covered with protective panels.

Operator is placing a masking panel in the window before spraying operation begins.

Only one pass per coat is necessary with this system and no artificial drying methods are utilized. Two different nozzles are used on the Bede airless spray system. The smaller size, No. 20C15, is generally used for very small items. This nozzle has also been used in the training of new painters. However, the larger nozzle, No. 30C15, is used most of the time.

Has changing the finishing system paid off? Here are some of the advantages which company officials have listed:

- Labor costs cut 1/3.
- Finishing time cut by about 35%.

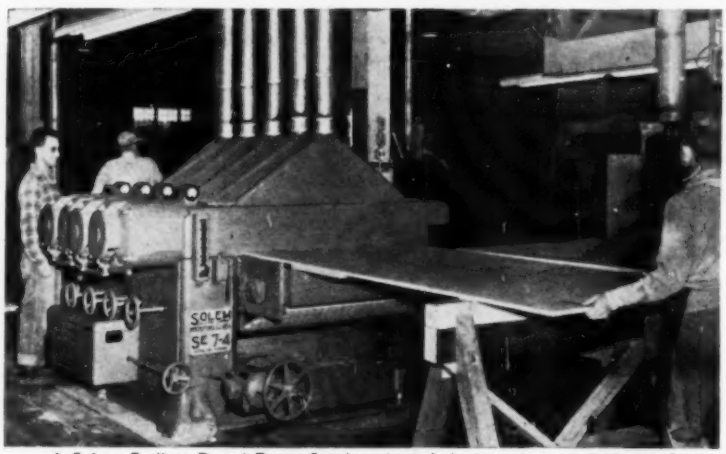
Operator is spraying inside of cabinets. Protective masking has been applied to counter top and wall.

Here employee gives cabinets final sanding.

- Very important to the firm is the 90% reduction in exhaust air requirements over the previous setup.
- Over-all surface finish is improved.
- More healthful atmosphere provided for spray operators.

DEPENDABLE—

SOLEM ENDLESS-BED DRUM SANDERS —FOR CONTINUOUS PRODUCTION!



A Solem Endless-Bed 4-Drum Sander at work in the plywood factory of Associated Plywood, Division of U. S. Plywood, in Willimina, Oregon

To ALL Owners of MERRITT-SOLEM Equipment

Pay no attention to misleading rumors or implications that Merritt-Solem equipment will no longer be built. This is not true. The full line is still being made, and will continue to be produced in the large plant we are building in Rockford. Merritt-Solem Division will appreciate your continued orders for parts, sub-assemblies and new machines. It is safer to purchase your parts from the machine builder.

Every SOLEM user will vouch for their dependability. You can count on the Solem Endless-Bed Drum Sander for continuous production, day after day, around the clock if necessary . . . with never a breakdown.

Whether your product uses plywood, veneers, solid or glued-up stock, you'll find a smooth finish is obtained more quickly and economically with a SOLEM Endless-Bed Drum Sander.

There's a size to fit your needs; they are made in 2, 3, and 4-drum styles, in a variety of widths.

Write Today For More Information

SOLEM MACHINE COMPANY
ROCKFORD ILLINOIS

This is the portable Bede equipment used by Prairie Schooner for airless spraying operation.

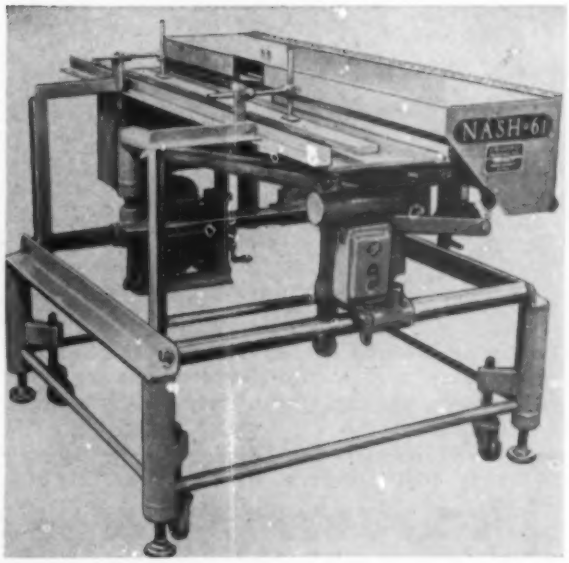
In describing maintenance, the firm says that a weekly change of fluids is necessary. However, both the savings pointed out above and the ease of maintenance must be explained in part by the fact that Prairie Schooner uses only one finishing material. The unit would not be as practical for a multi-color application.

Prairie Schooner does not hesitate to say that the new finishing system has paid off in every way. The product has been improved; the company has saved in labor and material costs; and working conditions have been improved for the employees.

The Bede airless spray system described in this article is manufactured by the Nordson Corp., formerly the Bede Products Corp., of Amherst, Ohio.

FINISHING ROOM SUPPLIES

Nash Drawer Side Edge Sander



This Nash drawer side edge sander makes it possible to sand drawer side edges as they eject from the tail end of the molder.

The new Nash No. 61 makes it possible to sand drawer side edges as they eject from the tail end of the molder; utilizing the molder feed to travel the stock over the table of the No. 61 machine, where sanding is accomplished on the edge of the drawer side. The No. 61 is not permanently attached to the molder, but is mounted on casters. The machine can be moved to the molder and located easily at any time drawer sides are being processed. Then machine can be moved away from the molder until needed again. The use of this machine, when running drawer sides, is said to eliminate the additional operation of sanding edges on another machine. No attention is needed after it is once located back of the molder, for the edge is sanded automatically as the drawer sides flow over the table.

The Nash No. 61 has a fixed guide rail, which lines up with the back fence on the molder. Adjustment for different width drawer sides is obtained by moving the entire sanding belt assembly with the table sliding under the fixed back guide rail. The sanding belt assembly, consisting of pulleys, pad, motor, control and table, moves very easily and in correct alignment for width adjustment. This type of design eliminates the necessity of moving the entire machine for any width adjustment, as the machine is originally lined up with the back fence of the molder.

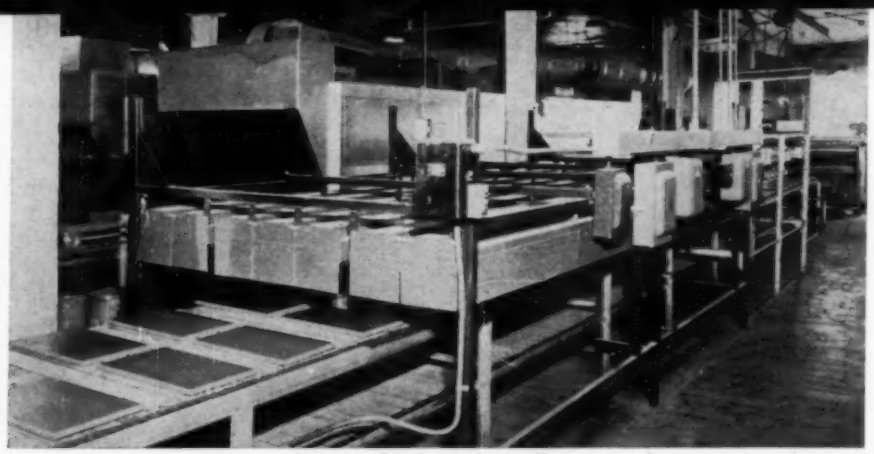
The formed pad over which the sanding belt travels is shaped for the edge sanding of these drawer sides. Guide rails are located along the sandbelt side of the table, these having a slight adjustment for the control of sanding cut desired. Machine operates with a belt 120" long and belts up to 4" wide can be utilized. The unique belt control device permits up and down adjustment of the belt on the pulley, to utilize the majority of the sanding surface without confining the sanding action to one narrow path.

An illustrated bulletin illustrating and fully describing the operation of the Nash 61 is available from J. M. Nash Company, Inc., 2360 N. 30th St., Milwaukee 45, Wis.

Use postpaid card. Circle No. 25

Speeds Drying

A driQuik ceramic type electric infrared oven is used to speed up drying of ink sealer that is roller coated over printed wood grains at the Memphis Furniture Mfg. Co., Memphis, Tenn. The



Infrared oven speeds up drying of ink sealer roller coated over printed wood grains. Oven has temperature control which may be set from 0% to 100% of rated power.

oven is manufactured by the Dry Clime Lamp Corp., Greensburg, Ind.

The two 7' sections of the driQuik oven are doing the work that three 9' sections of a previous oven were doing, according to T. C. Faulk, superintendent of the Memphis Furniture Mfg. Co.

These ovens have temperature controls which may be set from 0% to 100% of rated power. They and the conveyor are set for one minute and five seconds flash off, 42 seconds of heat and 35 seconds of cooling.

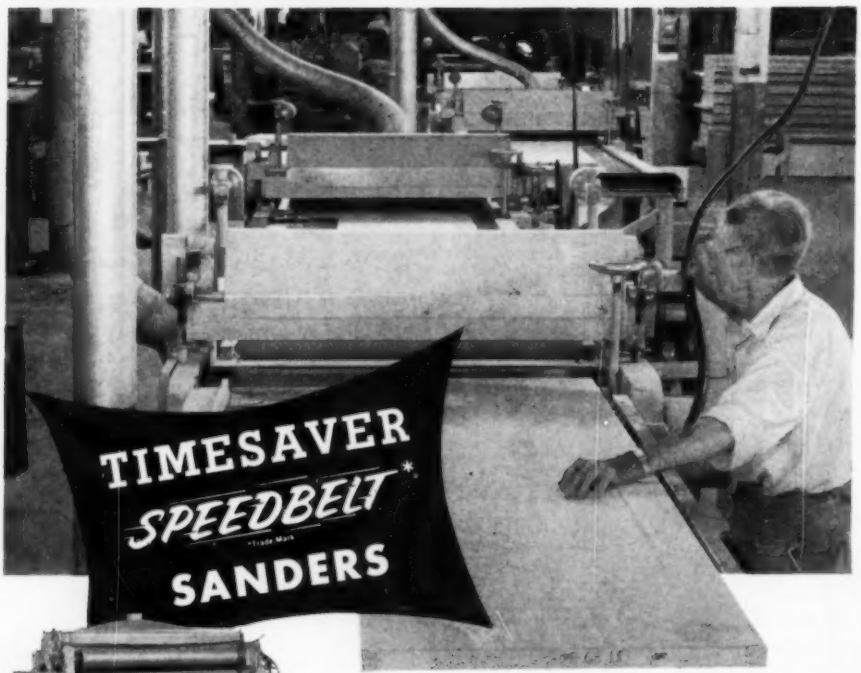
"We do not have the heat loss from stray radiation which we had before," Mr. Faulk said.

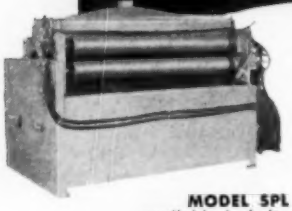
Temperature may be changed by the turn of a dial on the temperature control whenever the oven is used for a different operation.

Use postpaid card. Circle No. 26

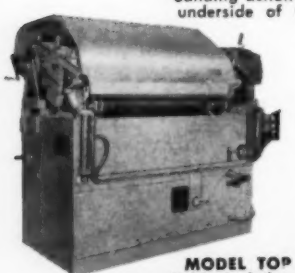
Take advantage of . . .

PRODUCTION LINE SANDING...





MODEL SPL
available in belt widths of 24", 36" and 50"
Sanding action is for underside of work.



MODEL TOP
available in belt widths of 24", 36", 50" and 54"
Sanding action is overhead.

Designed for high speed production. Timesaver Sanders operate at belt speeds of 4800 to 6000 FPM. Feed Speeds are variable from 35 to 80 SFM. Higher or lower speeds are optional. Each sanding operation is done in one pass for work up to widths of 50". This eliminates leave-off marks, chatter marks, digs and other unevenness common in other sanding methods. Patented *automatic belt tracking* insures positive sanding action and keeps the abrasive belts running true at high speeds. Used in tandem set-ups as shown, both sides of the work can be rough and finish sanded in one continuous operation.

Write Today . . . send for descriptive literature on these amazing wide abrasive belt sanding machines. Find out how the Timesaver "Speedbelt" Sanders can save you money in materials and manpower while doubling your production.

TIMESAVER SANDERS

P.O. Box 7446 • Robbinsdale Station

MINNEAPOLIS 22, MINNESOTA

Du Pont Introduces New Line Of Wood Stains

A new line of stains offering a limitless range of colors to suit the modern trend in interior wood finishing is being introduced by Du Pont under the "Satin Sheen" label.

Blonde, fruitwood, driftwood and platinum have been developed to supplement traditional stains. By utilizing Du Pont custom color colorants with platinum, countless hues in green, red, blue, and yellow can be produced.

Variety of shading in light and dark oak, mahogany, maple, and walnut is likewise limitless when these are mixed with penetrating wood finish.

For natural wood paneling and trim in home or office, and for furniture and floors, the new stains offer endless opportunity for unusual color effects.

Additional information is available from Product Information Service, E. I. DuPont de Nemours & Co., Wilmington, Del.

Use postpaid card. Circle No. 27

New Plywood Finish

General Plywood Corp., Louisville, Ky., has received permission to file patent claims for its new method of finishing plywood by the Board of Appeals, U. S. Patent Office. The new process eliminates hand finishing by use of a heat and pressure treatment of the wood surface to produce a smooth, glossy surface at the factory. General plans to license the process and is said to have several firms ready to use the new method to be called "Microseal."

Minnesota Mining also has a new process which has been patented which uses cork belts for finishing.

Use postpaid card. Circle No. 28

Automation

with

FLEX-VEYOR

KEY TO - -

SUCCESSFUL PALLETIZED FINISHING OPERATIONS AS PROVEN IN THE FOLLOWING PLANTS

John Widdicomb Co.
See August Issue
Dixon Powdermaker
H. J. Scheirich Co.
Imperial Furniture Co.
Henri Vallieres Furn. Co.
Dean C. Woodward Co.
G. R. Bookcase & Chair Co.
Monitor Furniture Co.
Drexel Furniture Co.

Write for Brochure Today!

AUTOMATION EQUIPMENT CO.

314 Straight Ave., S. W. Phone GL 8-4156
GRAND RAPIDS 4, MICHIGAN

Irving S. Pfefer Co.

PROUDLY ANNOUNCES

Their First Annual German

INDUSTRIAL WOOD WORKING MACHINERY TRADE SHOW

FEB. 1 through 9 10 a.m. to 9 p.m.

2005-15 EMPIRE AVE. BURBANK, CALIF.

SEE THIS EQUIPMENT IN ACTUAL OPERATION

Be Sure to Come!

- DEMONSTRATIONS
- DISPLAYS
- VALUABLE PRIZE

9 BIG DAYS • STARTS FEB. 1

"Our Policy Is Service"

Irving S. Pfefer Co.

2005-15 Empire Ave. Burbank, Calif.
Telephone: Victoria 8-1181
Distributors of Woodworking Machinery Glue Room Equipment

Columbia HOT PLATE PRESSES

15 FEATURES Save in Service

Every feature of Columbia Hydraulic Hot Plate Presses has been designed, perfected and proved for smoother operation, superior production, higher efficiency, economy and durability. Even in routine operation, these features make better production easy to attain.

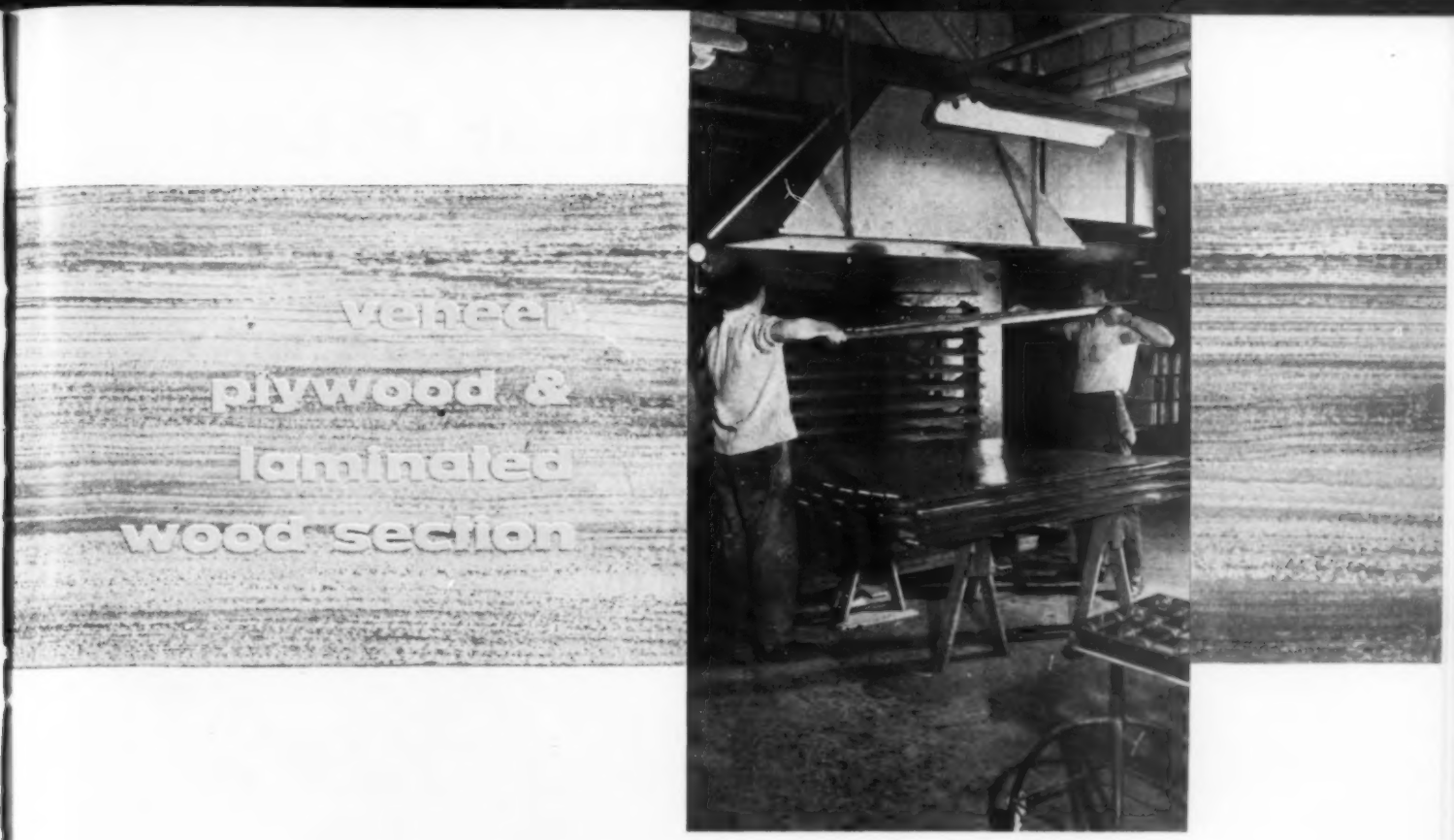
Shielding for flexible hoses shown on above 16 daylight hot plate press —optional extra

- **SUPER-RIGID CONSTRUCTION** for trouble-free service
- **CAST STEEL CYLINDER AND STEEL ALLOY RAM** for minimum maintenance
- **IMPROVED HYDRAULIC SYSTEM** for quick closing, accurately maintained pressure
- **EXCLUSIVE COLUMBIA PLATEN SPACER** for extra rigidity, strength and safety
- **AUTOMATIC PRESSURE TIMING** for absolute product uniformity
- **PRECISION TEMPERATURE CONTROL** for utmost operating efficiency and accuracy
- **TROUBLE-FREE STEAM FEED SYSTEM** for long life with minimum maintenance
- **READILY ACCESSIBLE PACKING** for easy replacement
- **AUTOMATIC AIR-BLEEDING** for convenient and positive operation
- **LEAK-FREE PLATEN DESIGN** for easy clean-out of sediment or scale
- **FLEXIBLE HOSE STEAM PLATEN CONNECTIONS** eliminate mechanical troubles
- **STEAM LINES PROTECTED** from accidental damage
- **LEAKPROOF WELDED HYDRAULIC PRESSURE SYSTEM** positively assures full pressure
- **FASTER, MORE UNIFORM HEATING** with special platen design
- **CONVENIENT REMOTE CONTROL** with floor-mounted panels

Want further details?
Write today for Bulletin HP-15.
The Lodge & Shipley Co., 3061 Colerain Ave., Cincinnati 25, Ohio.

Lodge & Shipley

....your **LODGE-***ical choice!*



● Earlier this fall, Portland plywood manufacturers decided to step up their promotion program, make more consumer products. There is also a strong movement to set a deadline after which all plywood will be made of waterproof or exterior type glues. This is to better enable plywood to compete in farm markets.

● In addition to the plywood stories in this section, be sure to read the story on page 67, describing the U.S. Plywood Corporation's prefinished panels. These panels are finished in a 97 minute cycle.

● Western firm plywood manufacturers will be working more closely with lumber dealers in promoting a joint effort toward use of fir plywood in the Lu-Re-Co building system. This system is keyed to building components based on a 4″ module. W. E. Difford, managing director of the Douglas Fir Plywood Association, said, "No other material lends itself as readily to component building systems and this idea is going to grow to major proportions in the next few years." The D.F.P.A. has been looking for ways to promote plywood components.

● Seven years of rigorous New York apartment usage has resulted in a fine performance score for 581 one-hour fire doors of wood and mineral core construction. This report was furnished to the U.S. Plywood Corp., by the operating superintendent of Manhattan House. Facts such as this should be publicized to promote the further use of quality plywood doors.

A Modern Veneer Plant

As a production expert mentally pictures a veneer plant he sees a factory utilizing advanced manufacturing techniques.

He visualizes the various operations as the log moves from soaking pond to shipping platform.

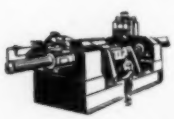
He sees the log quickly debarked—then moved to the * **lathe** to be speedily cut into veneer—the strips of veneer conveyed into one of the levels of the * **deck system.**

From the decks, in sequence, he pictures the sheets being cut to size on the * **clipper**—then being conveyed through the various levels of the * **dryer**—to emerge thoroughly dried and ready to be glued up into plywood or shipped to other producers.

And in a convenient corner he sees the essential * **automatic grinder** which keeps all knives in condition to assure top production.

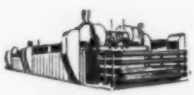
THE COE MANUFACTURING COMPANY
PAINESVILLE, OHIO

* COE **LATHE**

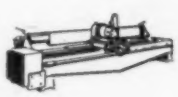


* COE **CLIPPER**

* COE **DRYER**



* COE **KNIFE GRINDER**



* **In the above plant as in a majority of plywood factories the basic machinery is of COE manufacture**

You Can Take It With You!

By Bert Goldrath

A completed Porta House can be seen in the foreground. Potential market for these buildings made of Douglas fir exists wherever construction is underway.

The slogan expressed in the title of this article has helped Ridgely K. Dodge create a thriving nationwide business out of a simple idea. More than 2000 of his portable buildings are in use as field offices, tool sheds and construction shacks by building contractors and subcontractors. Some are serving as vacation cabins and backyard workshops.

Dodge got the idea for his Porta House right after World War II when he worked as estimator and detailer for a building contractor. His boss was losing money in improperly built sheds. Put up with the hope of salvage, they were usually a dead loss when they came down. Too often it was necessary to coordinate a six-man crew with a flatbed truck to haul around a cumbersome shack, or tie up cranes and winches to move it on skids.

Taking time off, Dodge went out and interviewed men on construction jobs who used small buildings in their work. He sized up the various types of work buildings he found, and saw every kind from heavy structures on skids to shacks that had been quickly roughed-up and waved in the breeze. Interviewing and keeping his eyes open, he enumerated the requirements he thought a job shack should have:

It should be light, strong, sectional, economical, easy to erect, expandable, compact when disassembled, good-looking; it should have maximum salvage, interchangeable panels and require minimum upkeep. Keeping all these factors in mind, Dodge went to his drawing-board and spent months incorporating them all into a single plan. The original plan was so thoroughly worked out to the final detail that it has needed little or no changing in ten years.

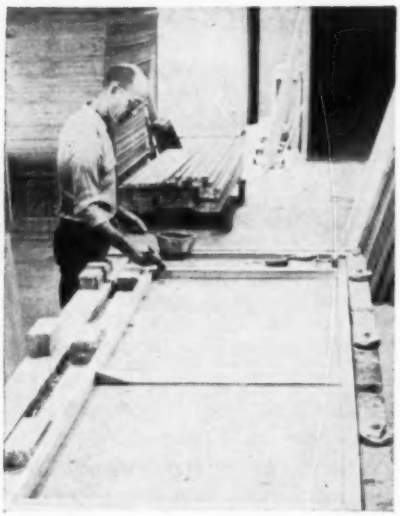
As Porta House took on the status of an enterprise, Dodge gave it his full time. With an investment of only $1000, he began turning out prefabricated sections in his garage. That phase was soon outgrown. Today the Porta House plant in Pleasant Hill, Calif., represents an investment of thousands of dollars. Equipped with modern power tools, the plant last year turned out close to $200,000 worth of small buildings. One, not so small, was used by Shell Development Co. as a field office—it was set up to measure 9′ x 171′. In 1956 the company made and sold 387 buildings. Production in 1957 averaged one building a day. Thus, it takes about six man-days to turn out a building.

Porta Houses are available in 9′ and 12′ widths and in any length in multiples of three feet. Most production is in the 9′ x 12′ size. This sells for $408, including floor. Dodge estimates that a shack of comparable size and quality built by a contractor would average $500 in cost, and would be far from 100% salvageable.

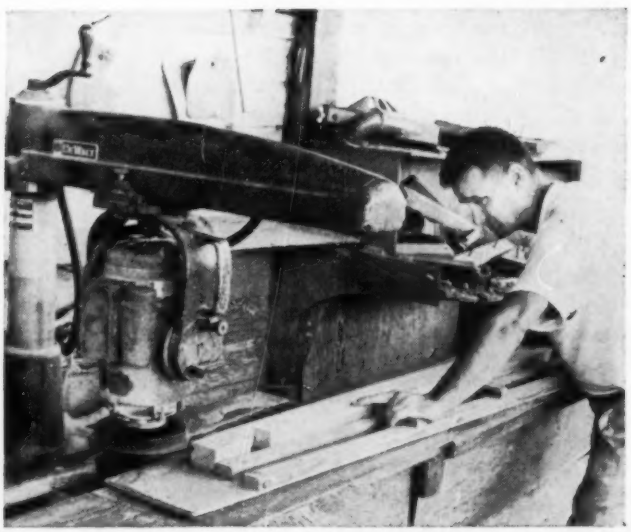
The average-sized Porta House field office or tool shed can be delivered to a job site on a pickup truck. An unskilled laborer with nothing more than a hammer can erect it in an hour. There's really no building—all sections are fastened together with square-shanked cad-plated bolts and wing nuts. Double-head 16d. nails in the sill secure the building to the floor.

Window and door sections may be installed in any combination. Even more, they may be changed around without dismantling the building. Triple-hinged doors are 34½″ wide to accommodate a wheelbarrow, and doors swing out to conserve floor space. Windows are 2′0″ x 2′6″, hinged at the bottom to open in. All wing nuts are inside, making the building tamper-proof.

Clear Douglas fir framing members are drilled to take bolts which join building sections.

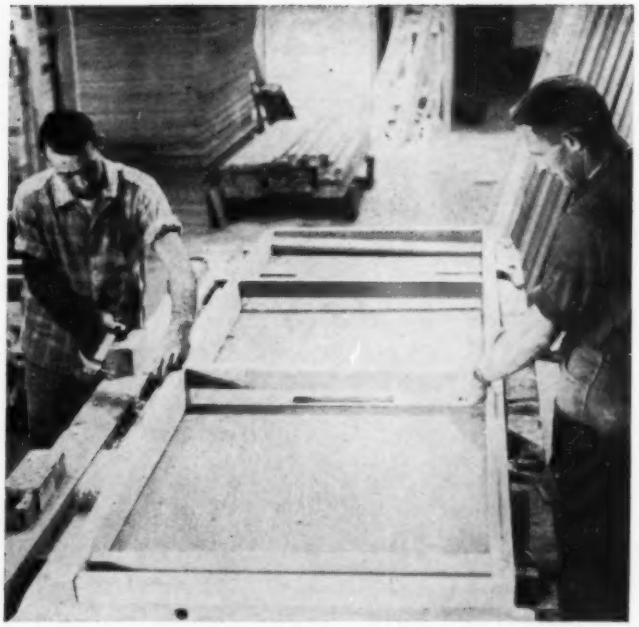


Framing for a wall section, built up on a jig, is glue-coated before panel is applied.



Domed roof rafter is milled with a built-in rain gutter.

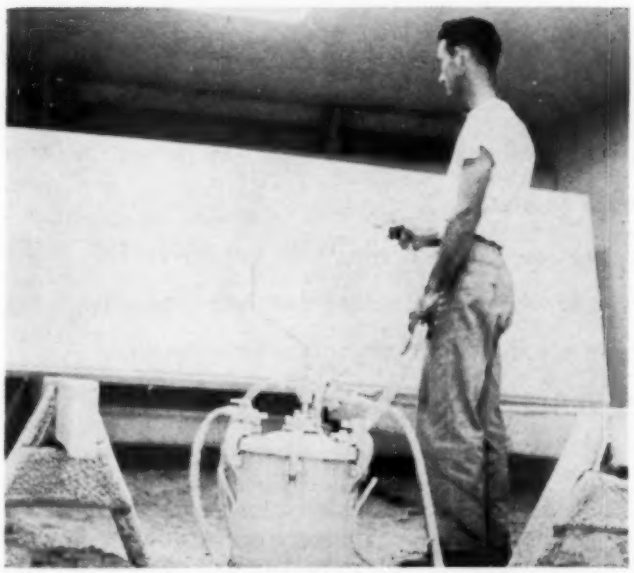
With the huge road building program in effect throughout much of the country, this story on portable buildings is particularly timely. Currently Porta House Inc. is turning out a building a day.



Here's how roof section framework looks before paneling.

Half-inch Plyscord is secured to floor framing with 7/8" staples.

Floor sections, made up of 3x4's for smaller buildings, also run on same 3' module as walls.



In final phase, each section receives one coat of primer on all surfaces.

Designed with strength and lightness in mind, the buildings are framed with 2" dimensional lumber—clear Douglas fir. Walls are paneled with ⅜" fir plywood, exterior grade AC quality, with the A face out. Since sections may be subjected to considerable wracking, fir plywood is the preferred material. It is used in ½" thickness for floors and in ¼" for roofs.

Framing runs around the perimeter of each section, with cross-members set in for greater rigidity. Corners are joined by corrugated fasteners. Plywood, obtained in special 3′ x 7′ size, is fastened to the glue-coated frame with 4d. box nails at the corners. Then the panel is solidly secured to the frame with ⅞" staples gun-driven.

Roofs are ingeniously rendered leakproof by a built-in rain gutter. Should any rain penetrate between tight-fitting panels of the domed roof, it runs off in a milled trough which extends beyond the walls.

Doors are cut out of a single 3′ x 7′ panel so that they fit precisely back into the cut-out frame. Flat 4" corner angle braces add sturdiness to door frames.

Plywood floors are laid on 3x4's in smaller buildings and 3x6's in large ones. Where a floor is not required, 2x4 sills are supplied.

Each prefabricated section is furnished with a coat of off-white primer inside and out. Spraying is done at the Pleasant Hill plant in a deep booth which accommodates a large number of pieces.

Porta House's inventory problem is reduced to almost nothing because wall, door and window sections are completely interchangeable. They may be located or relocated around the building to fit special needs, and any number of doors and windows may be put in any position.

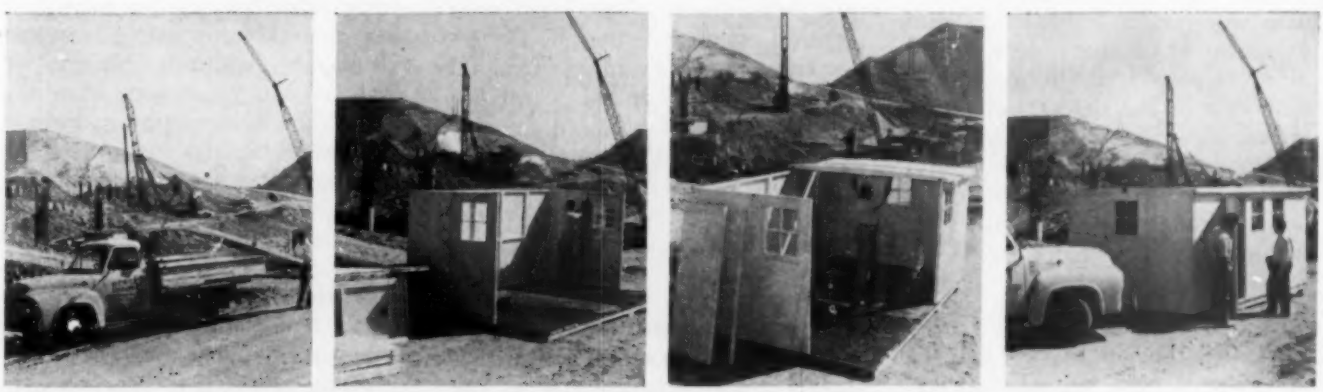
Buildings, too, may be lengthened or shortened as needs change. Interior cross partitions with or without doors are manufactured.

Quick to spot a growing trend, Dodge three years ago instituted a rental plan for his buildings. Typically, a 9′ x 12′ Porta House in the San Francisco-Oakland area will rent at $50 for the first month and $25 a month thereafter, with 75% of rental applying toward purchase. The charge includes local delivery, erection and removal, with insurance coverage. Rentals seldom need more than a paint spraying to put them in first-class condition again. In fact, Porta Houses built ten years ago are still in daily use.

Besides building contractors and subcontractors, customers include oil companies, pipeline contractors, bridge builders, timber workers and industrial plants (as outbuildings).

The field is growing, too. Originally, Dodge intended his Porta Houses as field offices to accommodate planning tables, or as tool storage sheds. Now, however, some unions are insisting upon changing rooms for workmen. Architects and inspectors need site work space. Each trade involved on a job usually has its own building.

Now building at the rate of one Porta House a day, with annual plywood consumption of close to a quarter-million square feet, the company is proving with each building off the line that "you *can* take it with you."



Here is a pictorial sequence demonstrating the assembly of a Porta House. First, the building arrives on the site by a pickup truck. The house can be easily setup by one man. The roof sections are added after walls are up (two sections are set aside in order to photograph interior). Completed house is now ready for occupancy.

HOW CLOSE ARE WE TO AN IDEAL GLUE?

Don Brouse, of the Forest Products Laboratory, reviews developments in adhesives for woodworking since 1900, their present status, and what may be expected in the reasonably near future. Characteristics of an ideal glue are listed and an optimistic view taken that many of these characteristics may be developed in the future.

No unusual powers are needed to predict that adhesives will become increasingly important to the wood-using industry. We may be growing wood as fast as we are cutting it, but in sawtimbers and high-grade veneer logs, we are certainly using basic capital as well as yearly increment.

A prediction of greater use of adhesives in the future should not disregard the fact that adhesives are already of great importance to parts of the woodworking industry. In the fourth quarter of 1955, for example, something in the neighborhood of 300 million square feet of hardwood plywood was produced. For the year 1955, the production of Douglas fir and other West Coast softwood plywood topped 4 billion square feet (surface measurement) on a ⅜-inch basis. Based on these plywood production figures, a conservative estimate would be that something over 200 million pounds of adhesives (dry basis) were used in 1955 by the plywood industry alone.

Since the role of adhesives in woodworking is already big and promising to become bigger, it may be quite worthwhile to take a general view of the field of adhesives in woodworking—what has been the progress in the past, what is the present status, and what may be expected in the reasonably near future.

Animal Glues

In 1900, the woodworker had but one type of glue, animal, that was readily available commercially and that had been thoroughly proven in use. Today, some ten distinct types are available together with several compositions that are essentially mixtures of different types. It may be of interest to review briefly these developments in woodworking glues during the last 50 years with the thought that such a review may indicate a probable course of developments in the future.

Animal glues are the oldest type of woodworking adhesives, and records of their use go back at least to the time of construction of the pyramids in Egypt. Animal glues are still in common use and are satisfactory for many uses. Like other glues that have survived in the competition of commercial use, they are capable of producing, when properly applied, excellent dry bonds in wood.

Animal glues' limitations are a lack of water resistance and certain operating characteristics. For the most part, they are applied in the form of a warm solution and the initial set takes place as a result of cooling. Permissible assembly periods vary sharply with temperature of the wood and working area and with grade of glue and concentration of mixtures. Consequently, the conventional animal glues that are applied warm are not readily adaptable to those operations in which the assembly time must vary within each item or batch, as in the production of plywood or in the fabrication of large laminated items. These limitations may account in part for the fact that the big increases in the production of plywood and glued laminated structural members did not take place until after other glues were developed.

The development of reliable liquid hide glues reduced or eliminated some of the disadvantages of the animal glues that were used warm, but by the time liquid animal glues were available commercially, other glues had gained a large share of the market.

First Starch Adhesive

In about 1903, F. G. Perkins developed a practical woodworking glue from starch. He found that tapioca starch seemed the most suitable for the purpose, and much of the starch glue used in this country was of tapioca starch from the Dutch East Indies.

For some purposes, the starch glue developed by Perkins was a distinct improvement over the animal glues. Although it was heated, usually in a mild caustic soda solution to convert the starch, it was cooled before use and applied at room temperature. Its operating characteristics were not changed significantly by those changes in temperature commonly occurring in woodworking shops, and assembly periods could vary over comparatively wide ranges, at least from less than 1 minute to more than 30 minutes, without significant effect on the quality of the glue bond. This wide range in permissible assembly periods was of distinct importance in the production of plywood. It permitted the development of procedures that greatly increased the speed of production and marked the development of plywood manufacturing as a separate division of the woodworking industry.

From about 1903 to World War I, a greater part of the plywood produced in the United States was

probably bonded with starch glues. Its most important limitations, however, were a lack of moisture and water resistance and an alkaline reaction that stained some species of wood.

Casein, Blood Albumin

The period of World War I marked the development of casein glues and, to a lesser degree in this country, blood glues. The demand for water-resistant glues for bonding plywood, spars, and other wood parts of military aircraft no doubt accelerated the development.

Like the starch glues, casein glues are easy to mix and apply. They are mixed at room temperature and, in this country, are normally used at room temperature, although some formulations can be hot pressed. The bonds have a moderate degree of water resistance but they cannot withstand indefinitely repeated wetting and drying or prolonged exposure to the weather or to an atmosphere sufficiently damp to permit mold growth. However, if the moisture content of the wood adjacent to the glue joint does not rise repeatedly or continuously above some 18%-20%, well-made casein glue bonds may retain their original strength and quality over many years.

During and shortly after World War I, the U. S. Forest Products Laboratory worked on the development of adhesives based on blood albumin. While usable formulas and bonding techniques were developed by which bonds superior in water resistance to casein glues could be produced, the most highly resistant glues required hot pressing. The number of hot presses in the woodworking industry of the United States at that time was limited, and consequently blood glues were seldom used in the domestic plywood industry. They were used rather extensively, however, in Germany, Finland, and Russia. One of the formulas developed by the Forest Products Laboratory was reportedly used by the English firm, Venesta Ltd., during the 1920's in producing their most resistant type of plywood.

Seed Meal Glues

In the early 1920's, I. F. Laucks developed practical and inexpensive woodworking glues based on soybean meal. The formulation was based on the protein fraction of the soybean meal and resembled rather closely the formulation of casein glues. Laucks developed the soybean glues with particular attention to the bonding of Douglas fir veneer. For that species, as well as for other softwoods, the soybean glues have been very successful. They have been used primarily in producing plywood of container grade with hardwoods.

As glues for softwoods, the soybean bonds have characteristics that closely resemble those of casein glue bonds. They have a moderate degree of water resistance, but they will not withstand the more severe exposures such as prolonged exposure to the weather or to a damp atmosphere. The development of this inexpensive glue with its favorable operating characteristics marked the start of the huge expansion of the Douglas fir plywood industry. Until about 1940, it was essentially the only type of glue used in fir plywood.

Other seed meals such as peanut and cottonseed can be used in place of soybean. At one time, an adhesive assumed to be basically a combination of peanut meal and casein was in production on a commercial scale. Its operating and bonding characteristics were favorable, but it did not retain its markets, probably because of changes in the trends of adhesive development.

In this same period from 1925 to 1940, considerable attention was given to improving the protein glues. In some cases, the efforts were successful. Combinations of soybean meal and blood albumin, for example, were formulated that were capable of producing bonds more water resistant than those made with straight soybean glue. No basically new types of adhesives, however, were developed in this country during that period, and the attention of the investigators began to turn to other basic materials for adhesives.

First Phenol-Formaldehyde Resin

In some of his early patents, Dr. Baekeland described the formulation and use of a phenol-formaldehyde resin as an adhesive for bonding. Apparently the market for molding powders based on phenol resins was much more promising than the market for woodworking glues. Consequently, the use of phenol resins for wood bonding was not pushed at that time.

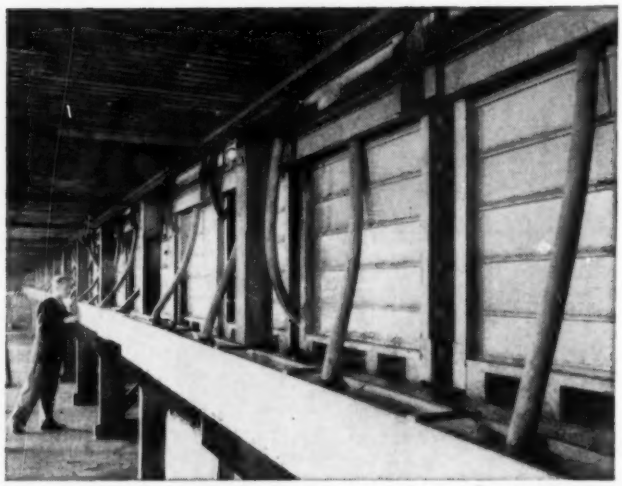
In the early 1930's the regulated economy in Germany diverted casein, the most popular glue base of that period, to uses other than glue and produced a pricing system that permitted bringing synthetic-resin glues onto the market at a price that could be tolerated for woodworking. The firm of T. Goldschmidt brought on the market a phenol- or phenol-cresol formaldehyde resin for wood gluing.

The Goldschmidt glue that gained first attention in the United States was in the form of a dry film consisting essentially of a partially reacted phenol-formaldehyde resin carried on a thin, porous paper. This film glue required a temperature of about 300° F. to complete the proper curing. This comparatively high temperature necessitated hot presses and consequently limited the use to thin plywood. To the plywood manufacturers in Europe, however, the use of hot presses for bonding was not uncommon. Consequently, they accepted the requirements more readily than plywood producers in this country, where hot pressing of plywood was rarely done at that time.

"Stop grumbling. You've got an orchestra, singers, and a chorus, exactly the same as in your musical comedy."

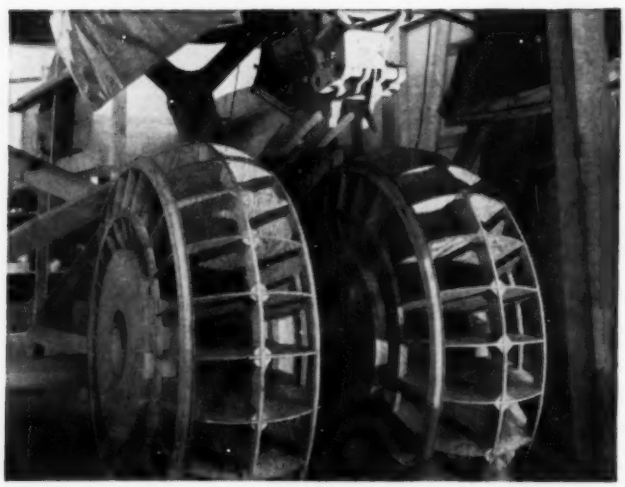
LIGHT

This prototype LCVP, built with an all-plywood planking system, dramatically demonstrates how fir plywood saves weight without strength loss. From 1,000 to 1,500 pounds lighter than the normal 18,000 pounds, the prototype developed by naval architect George W. Moore of Kettenburg Boat Works, San Diego, for the U. S. Navy Bureau of Ships, has passed accelerated beaching tests approximating four years service.



DURABLE

Resin-fiber overlaid fir plywood, used in construction of these electroplating cells, saved more than $30,000 in four years. The fir plywood acid tanks were built for $140 each, a saving of from $400 to $600 under rubber-lined steel tanks. Previous lumber tanks gave trouble with leakage, required heavy framing. Both objections were overcome by the overlaid-plywood units.



WORKABLE

Working mock-up of C-124 Globemaster transport built by Douglas Aircraft Co., Santa Monica, proves the versatility and workability of fir plywood. Shown are simulated tires of plywood, used to check brakes. Actual tires would have been too heavy for tests; fir plywood was used because of its strength, lightness, and working ease. Large size, smooth finish, and suitability for contour work were other reasons for using plywood in mockups.

DFPA® TESTED QUALITY

FIR PLYWOOD

means quality construction

FOR MORE INFORMATION about uses shown above, design and/or specification data, mail coupon ⟶

1. SPECIFY BY DFPA QUALITY TRADEMARKS

DFPA grade-trademarks appear only on plywood manufactured, inspected and scientifically tested under the DFPA quality control program. DFPA, Douglas Fir Plywood Association, is a non-profit industry organization devoted to product research, promotion and quality maintenance.

2. CHOOSE THE RIGHT GRADE FOR EACH JOB

Fir plywood comes in two types: 1. *Exterior* (waterproof glue for permanent exposure to water or weather); 2. *Interior* (moisture-resistant glue) for indoor uses, crating, sheathing, maintenance. Within each type are several grades – i.e., panels with one good side, two good sides. Most popular grades are shown below.

EXT-DFPA — Exterior plywood for permanent outdoor uses

PlyPanel® for panel-ing, most indoor uses

PlyScord® is unsanded panel for sheathing, crating, bins, etc.

PlyForm® concrete form grades come in Exterior and Interior types.

SPECIALTY PANELS include 1. *Overlaid Exterior plywood* (hard, smooth, abrasion-resistant fused resin-fiber surfaces) for siding, signs, tanks, concrete forms; 2. *Textured panels* with smart grooved, brushed or striated surfaces for fixtures, siding, special decorative effects.

DOUGLAS FIR PLYWOOD ASSOCIATION
Tacoma 2, Wash. (Good USA Only) Dept. 173

☐ Please send basic fir plywood specification data.
☐ Also send information about use of fir plywood for.....

Name_____

Firm_____

Address_____

City_____ Zone____ State_____

In spite of this handicap, a group secured the right to market the Goldschmidt film phenolic glue, Tego, in this country. Shortly after its introduction, the Resinous Products and Chemical Co., Philadelphia, Pa., secured the rights and installed the equipment to produce Tego.

Bonds produced by phenolic-resin glues, when properly used, are very resistant to water and various other liquids, to attack by micro-organisms, to high temperatures, and have proved repeatedly more resistant to extreme exposure than the wood itself. For the first time in the history of woodworking adhesives, therefore, a glue was available that was capable of producing bonds that could be relied upon to withstand any severe conditions that the wood itself could withstand. This development obviously broadened greatly the potential uses of plywood and particularly structural plywood. The development of the stressed-skin unit for prefabricated housing, for example, would have been greatly retarded except for the availability of adhesives capable of producing bonds in the plywood that were reliable under all conditions of service.

Following closely after the introduction of phenol-resin glue in film form, several of the resin producers developed and marketed phenol-resin glues in liquid form or as dry powders that could be suspended or dissolved in water or in alcohol-water mixtures. The forms that could be applied as liquids by conventional spreaders proved to be more popular than the film. At the present time, the film glue is used primarily for bonding thin or highly figured veneers.

The liquid types, however, gained wide acceptance by the plywood producers in the Pacific Northwest. This acceptance brought to the open market a type of plywood that could be depended upon to serve well under severe conditions of use. The availability of such highly resistant plywood increased public confidence in the product and, consequently, greatly increased the use of plywood for purposes requiring highly durable bonding.

In 1956, for example, the production of the highly resistant or exterior type of softwood plywood amounted to almost 1½ billion square feet in the United States and some 830 million square feet in B. C.

Urea Resins

Shortly after the introduction of phenol-resin glues, the I. G. Farbenindustrie introduced in Germany a synthetic glue based on urea-formaldehyde resin. The glue consisted essentially of the condensation product of urea and formaldehyde. The reaction was stopped at a stage in which the resin could be suspended or dissolved in water and the final curing completed in the bond under heat and pressure. The advantages of the early urea-resin glues over the phenol-resin glues were somewhat lower curing temperatures, a colorless glue line, and possible lower price. The Casein Company of America, later absorbed by Borden, introduced the urea-resin glues in this country.

The next step was the development of catalysts that accelerated the urea-formaldehyde reaction to a degree that permitted curing at room temperature. By the beginning of World War II, several companies were producing urea-resin glues of both the hot-setting and room-temperature-setting types.

The urea-resin glues found a large market in the hardwood plywood and furniture fields. In 1955, some 88 million lbs. of urea- and melamine resin glues were used in the plywood industry. For the same year, the consumption of phenol-resin glues was 36 million pounds. The urea-resin glue line is almost colorless, and resins formulated to set at room temperature will set rapidly at mildly elevated temperatures (about 10 minutes at 145° F., for example). They respond well to curing by high frequency heating. In many applications, the curing time could thus be reduced to a matter of seconds by the use of suitably designed circuits and jigs.

These resins can be extended to reduce costs with little decrease in dry joint strength, and they are sufficiently durable to give good service in domestic furniture, architec-

tural wall panels, and similar interior uses. Urea bonded joints are not considered sufficiently durable to withstand prolonged exposure to the weather or to temperatures much beyond the human comfort range.

Development of Melamine Resins

The next type of adhesive to be developed for woodworking was the melamine-formaldehyde resin that was introduced by CIBA (Chemical Industries of Basel). In chemical structure, melamine resembles urea, and when formulated for glues for wood, melamine resin has some similarity to urea resin of the hot-press type. The differences, however, are probably of greater importance than the similarities.

Melamine-resin glues require comparatively high curing temperatures, they are more costly, and so far no room-temperature-setting formulation has been found that is acceptable for general use in woodworking. On the other hand, melamine-resin glue bonds are very resistant to severe conditions of service. In severe laboratory tests, however, it is possible to show that phenol-resin bonds are more resistant than those made with melamine-resin glues, and limited tests have indicated that melamine-resin glues do not bond preservative-treated veneers as well as phenol-resin glues. For many purposes, though, they may be considered equal to the phenol glues in durability.

Presumably because of costs and operating characteristics, the straight melamine-resin glues have not found wide use in the woodworking field. Melamine resins are compatible with urea resins, however, and the two can be mixed in any proportion. These melamine-urea blends have proved useful for fabricating glued products that require more resistant glue bonds than can be provided by straight urea-resin glues.

Resorcinal Resins

In about 1943, the Pennsylvania Coal Products Co., later absorbed by Koppers Co., began offering a woodworking glue based on resorcinol resin. Resorcinol is one of the dihydric phenols, and is more reactive than the mono-hydric phenols and cresols used in preparing the adhesives that we commonly term phenol glues. Resorcinol-resin glues, consequently, can be cured at room temperature to a degree that is sufficient for many purposes, and they require only moderately elevated temperatures to bond laminates of even the denser species for structures that will be fully exposed to the weather. The main disadvantages are cost and the lack of curing below about 70° F. The resorcinol resins can be blended with phenol resins and, consequently, the cost

Announcing . . .

hitchcock's Wood Working

AWARD of MERIT

WHO WILL YOU NOMINATE?

You are invited to nominate a company, association, public institution or university for the Hitchcock WOOD WORKING Award of Merit. This citation is presented annually to an organization which has contributed to the expanded utilization of wood and wood products during the current year.

Any firm, association, or school is eligible—regardless of size. Fill in the blank and return to us: Hitchcock's WOOD WORKING, 222 E. Willow St., Wheaton, Ill. (You may nominate your own organization if you wish.)

Nominations Close February 15, 1958

I should like to nominate:

(Name)_____

(Address)_____

For the Award of Merit in the classification checked:

☐ A. Producers & Manufacturers of Wood Products
(1) Less than 100 employees____
(2) More than 100 employees____

☐ B. Associations

☐ C. Public Institutions & Universities

☐ D. Suppliers to the wood products manufacturing industry. This group includes suppliers of materials and machinery.

Your name_____ Company_____

Address_____

item can be reduced somewhat for those fabrication procedures in which the higher curing temperatures required by the straight phenols cannot be tolerated.

Use of Polyvinyl Resins

At about the end of World War II, the supply of animal glue became limited and polyvinyl-resin glues were offered to the woodworking industry as a substitute. In many respects, these polyvinyl glues are very suitable for woodworking, particularly for certain assembly operations in furniture fabrication. They produce a colorless glue line, they are marketed as a ready-to-use emulsion, the working life is indefinitely long, they set quickly, their resistance to moisture exceeds that of animal glue to some extent, and since they are only slightly acid they do not stain significantly. They have disadvantages, however, that should be considered before deciding on use.

All the other synthetic-resin glues discussed so far are of the thermosetting type that, once properly cured, remain firm and rigid even though the temperature of the glue bond may be raised above the curing temperature of the glue. The polyvinyl resins, however, belong to the thermoplastic group that does not set to a permanently firm, rigid condition, but yields slightly under continuous stresses below failing load. Consequently, they are not entirely suitable for use in bonds that are constantly under stress and where a firm bond of high strength and resistance to creep is essential.

In other uses, such as dowel and mortise-and-tenon joints, this flexibility seems to be an advantage. In tests of dowel and mortise-and-tenon joints exposed to conditions similar to those expected of furniture in normal domestic use, the polyvinyl glues performed better than other glues commonly used for assembly joints in furniture. The desirability of reducing or controlling the creep characteristics has been recognized, and some of the producers of polyvinyl glues are attempting to improve their polyvinyls by compounding them with thermosetting resins that will increase the rigidity of the glue joint.

Improving Quality

Throughout the development of woodworking glues, many attempts have been made to improve the glues by eliminating or reducing the effect of some objectionable characteristics. Some of these attempts were to:

- Increase the resistance of animal glues to water and microorganisms by the addition of preservatives and tanning agents.
- Increase resistance of casein glue and soybean glue to microorganisms by the addition of preservatives.
- Increase the water resistance of casein and soybean glues by formulating with blood albumin.
- Improve the working characteristics of urea-resin glues by the addition of fillers such as walnut-shell flour.
- Accelerate the cure of phenol- and urea-resin glues by the use of acid catalysts.

While several of these attempts to improve the characteristics of a certain type of glue have been successful, the improvement has been one of degree only, and the fundamental characteristics have remained as limiting factors. However, the blending of two types of glue, such as phenol and polyvinyl, and the development of new types or resins appear to offer greater promise.

The adhesives now available for bonding metal to metal illustrate some of the possibilities of improv-

ing adhesives by combining different types of resins. For several years, casein-rubber latex combinations had been used for bonding metal sheet materials to wood. Although the bonds were strong enough for many purposes, they were not strong enough to be considered adequate for structural units in which the strength of the bond was critical.

Recent Developments

In the early 1940's, however, adhesives and bonding processes were developed that, when properly used, produced bonds of high strength and durability between sheet metal and porous materials. Since that time, several other resins and bonding processes have been developed for the adhesive bonding of metal to metal and to other materials. Nearly all of the current adhesives for metal bonding are based on the combination of elastomers or thermoplastic resins to reduce stress concentration and thermosetting resins to provide the desired rigidity and resistance for the glue bonds. Some of the current combinations are vinyl-phenolic, neoprene-phenolic, and nitrile rubber-phenolic.

The bonding of metals involves the preparation of the surface of the metal beyond merely removing dirt, grease, and other foreign materials. More or less standardized procedures for preparing aluminum surfaces for adhesive bonding have been developed. For other metals, such as magnesium, titanium, and stainless steel, further investigations are needed, and these investigations may disclose some of the unknown characteristics or fundamentals of adhesion that may find future application to woodworking glues.

A desirable characteristic of adhesives for metals is that they be 100% reactive so that no solvent or liquid or gaseous products of reaction must be removed after the adhesive is spread on the metal. While this characteristic is of less importance in bonding wood than in bonding metals, there are operations in wood bonding that could be improved if the bonding process caused no change in the moisture content of the wood.

The development in recent years of new polyester resins for glass fabric laminates and of epoxy resins for coatings were of considerable interest to the adhesive industry because these resin systems were in liquid form for convenient spreading, but the solvents reacted chemically with the resin without the evolution of by-products. The epoxy resins have so far proved much more promising as wood adhesives than have presently available polyester resins.

These epoxy resins are generally reaction products of bisphenol and epichlorohydrin, and are prepared for adhesive use by incorporating certain amines as curing agents. These epoxy-resin adhesives can be produced as readily spread liquids capable of curing at 70° F. or higher. Pot lives are generally short but progress in the use of newer amine curing agents has extended pot lives somewhat. Because no solvents or volatile by-products are released in curing, these adhesives do not require the high bonding pressures commonly used in wood gluing. They do not, however, normally possess high tackiness characteristic of contact-setting adhesives. Epoxy resins can be combined with other resins such as certain polyamide resins or phenol resins. They can also be combined with various fillers to modify their properties.

Straight epoxy resins are relatively colorless, soluble in organic solvents before curing, more expensive than other resins at present, and generally tend to retain a certain amount of themoplasticity at elevated temperatures although the resins with proper curing agents are potentially thermosetting. Perhaps their outstanding property as an adhesive is a high degree of adhesion to a variety of materials including wood, metals, plastics, and glass. They do not have outstanding moisture and water resistance, and their other durability characteristics have not yet been adequately investigated. They have found important applications in bonding metal for aircraft, but at present they seem to show no outstanding advantages for bonding wood to wood. Their high cost and other limitations cited further limit their present consideration in this field. They have been used to a considerable extent for laminating impreg for die models for the auto industry.

Another field that appears to offer possibilities in improving the techniques of wood bonding is in contact-setting adhesives. Within

Click's Veneer Tables

For Manufacturers, Dealers Anyone Who Works With VENEER, PLYWOOD, CUT LUMBER, BOXES, Etc.

A handy book of accurate tables for quickly determining square feet contents of veneer and the cubic contents of logs, complete to fractional units.

Users tell us it pays for itself in a month in time saved and errors eliminated.

SEND FOR YOUR COPY TODAY
ONLY $10.00 POSTPAID

Fourth Edition Now Available

Mrs. A. Graham Click
Click's Veneer Tables
P.O. BOX W-147
ELKIN, NORTH CAROLINA

BIRCH DOOR PANELS

1/8" Canadian Birch Plywood in door sizes only.

BELLERIVE VENEER & PLYWOODS LTD.
MONT-LAURIER, PROV. QUE., CANADA, PHONE 158

recent years, many patents have been granted for contact-setting and pressure-sensitive adhesives. While many of these have been directed toward the packaging field, some have been directed toward the bonding of such wood products as insulation board or acoustical tile in the building field.

The asphalt mastics and rubber-base adhesives for bonding wood and linoleum floors may be considered as contact-bonding-cements, and the bonding of plastic table tops to a plywood base is often done with contact adhesives. Equipment is available commercially to provide roller pressure for this operation of bonding decorative surfacing to wood faces. If successful, the advantages are obvious because it would permit converting to a continuous operation in place of a batch process.

While the few tests made at the Forest Products Laboratory have indicated that none of these contact adhesives now available is capable of producing bonds that are strong, rigid, and durable enough to serve for the gluing of stressed members, it does appear that some of them are very near the stage where they could be used to apply overlays on wood surfaces by rapid, economical procedures. When such a procedure can be demonstrated to be reliable, important advances in the use of paper-base overlays for lumber and plywood can be predicted without hesitation. Further, if a contact pressure adhesive capable of producing strong, durable bonds under roller pressure only can be developed, the impact will be felt strongly in the prefabricated housing industry, because it would permit a sharp reduction in the labor costs and time of fabricating the building units.

Characteristics of an Ideal Glue

A listing of all the desirable characteristics of an ideal glue for woodworking may be very disappointing because no one type of glue available at present meets all the requirements by any means, and because the list will show characteristics that appear mutually exclusive in the light of our present knowledge. It must be recognized, however, that two characteristics, indefinitely working life and rapid setting, that seemed mutually exclusive have in a measure been provided in the polyvinyl glues. The same end result of a quick cure combined with favorable working characteristics has also been provided by taking advantage of the properties of high-frequency circuits for rapidly raising the temperature at the glue line.

The possibility of developing better catalysts that will remain stable at ordinary temperatures and become active at slightly elevated temperatures has not been thoroughly investigated.

A study of the basic properties that a glue must have and constant attention to developments in other related fields are promising steps to aid the chemists in the development of improved adhesives.

It is encouraging to recall that many of the glues now commonplace would have been considered impossible by the knowledge available in 1900, for example. This survey of the progress in woodworking adhesives since 1900 should justify an optimistic and rather well-grounded hope that many of the characteristics desired but not now available in current glues will be developed, and in a shorter time than the more conservative of us may think.

This material was first presented at the 1957 National Meeting of the Forest Products Research Society and is published with permission from the society. The 1958 National Meeting will be held at Madison, Wis., June 22-28.

THE SAVONLINNA MILLS IN FINLAND, PART OF THE EXTENSIVE PLYWOOD OPERATIONS OF OY. WILH. SCHAUMAN AB

ALL-BIRCH PLYWOOD

From the world-famous forest resources of Finland, imported all-birch plywood — sizes up to 4' x 6', all thicknesses . . . cut to size to buyer's specifications.

All-birch ¾" 13-ply or 15-ply laminates for cabinet doors, table tops, etc.; lumber core for table tops; door panels of birch plywood (⅛" 3-ply).

Also standard hardboard, ⅛" and 3/16" thickness, with outstanding physical properties.

Dependable deliveries from Finland's largest and oldest plywood source. Quotations submitted — your inquiries invited.

FINWOOD
INDUSTRIES • Ramsey, N. J.

VENEER

AMERICAN STREAMLINED COMB GRAINED

Single Ply Quality Veneers in

WHITE OAK

RED OAK

WALNUT

CHERRY

MAPLE

Investigate Our Service And Complete Facilities Now

HILL BROS. VENEER CO. INC.

EDINBURG, INDIANA

POSTFORMING Cuts Cost of Laminated Counter Tops

Accurate temperature control and consistent quality help insure high production

Manufacturing costs reduced 40%! This is the story of the National Vanity Co., Kenilworth, N.J., and the National Kitchens Co., Bayonne, N.J. How did they do it? These savings have been achieved by redesigning the product which, in this case, is a laminated decorative counter top. In redesigning, it is now possible to laminate the tops as a complete unit. The ability to laminate the entire top depends on a postforming technique which shapes the rigid Formica plastic sheet to the contours of the top and produces a continuous, seamless surface from the backsplash to the bull-nose front edge.

By laminating the tops in this manner, all the labor formerly required to cut, fit, solder and buff the stainless steel edging and cove molding on old-style tops has been eliminated. Although the wooden cores for the contoured backsplash and bull-nose cores cost up to 5c per foot more than the stainless steel edging they have eliminated, the very large reduction in time and labor with postforming has resulted in the net saving of 40% in over-all manufacturing costs. According to James D. Barlow, plant manager, three tops are now being produced in the same time required to turn out one old-style top. The new postformed tops are also welcomed by the end user, since they contain no crevices or edging to collect dirt or water.

The postforming and lamination is performed on Bechtold equipment controlled by Fenwal bulb-and-capillary temperature controllers. Postforming is a technique of shaping thermoset-type plastics which, as a class, are rigid, brittle materials that do not soften when heated and thus are difficult to reshape after manufacture. However, with careful heating they lose enough of their inherent brittleness so that they can be formed under die pressure. This process requires extremely accurate temperature control because, in order to attain the proper forming characteristics, the plastic sheets must be heated to about 40° above their maximum service temperature. If heated a few degrees too hot and/or a few seconds too long, the plastic will blister, whereas insufficient heating will cause it to crack in the postforming dies. The key to maintaining high production without damaging the costly large plastic sheets is precision control of the temperature-time cycle.

National's operation is set up to produce tops at the rate of one large top (up to 10' long) or two small tops (up to 5' long) every 5 minutes. Their equipment—designed and installed by the Bechtold Engineering Co. of Ft. Lauderdale, Fla.—consists of a contact heating machine for preheating the Formica sheet; two postforming presses, one for the backsplash, the other for the front nosing; and a two-tier heated laminated press. A two-man team and a helper is all the manpower needed to maintain the maximum production rate.

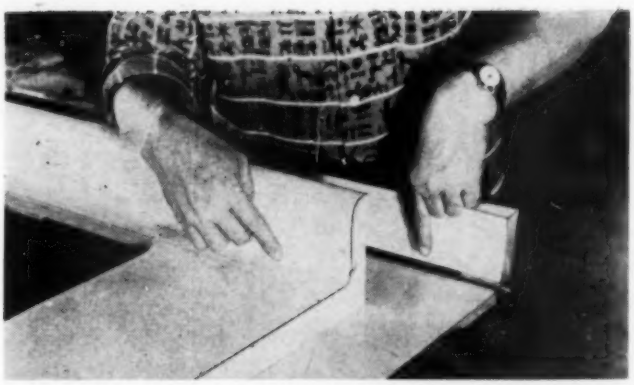


Fig. 1. Comparison between the new- and old-style counter tops shows how the postforming technique produces a smoothly contoured, seamless surface and eliminates the extensive hand labor formerly required to install the stainless steel edging.

The contact heating machine consists of two flat platens, 8" wide and 10½' long, the lower one of which is heated. The upper platen, which is raised and lowered pneumatically, provides the positive contact pressure to assure uniform heating along the full inserted length of the Formica sheet. The lower platen is heated by four 2000-watt strip heaters, 5' long, mounted in a double row along the entire length of the platen. The four heaters are controlled by two Series 541 bulb-and-capillary type controllers, manufactured by Fenwal Incorporated, Ashland, Mass. Each controller contains two narrow-differential, 15-amp. snap switches, each of which controls one strip heater. Because of the almost inevitable temperature differential between the ends and middle of any long heated surface, closer control of the long platen is obtained with two controllers than could be

COMPLETE PLYWOOD SERVICE

Located midway between New York and Chicago, our complete facilities are available to you with prompt deliveries and engineers to service all of your plywood requirements.

- Cabinet Doors
- Sliding Doors
- Institutional Doors
- Hollow Core Doors
- Architectural
- Plastic Faced
- Curved Panels
- All types

cut to size—shaped—bored—finished

JAMESTOWN Quality Hardwood PLYWOOD

Jamestown Veneer and Plywood Corporation
JAMESTOWN, N. Y.

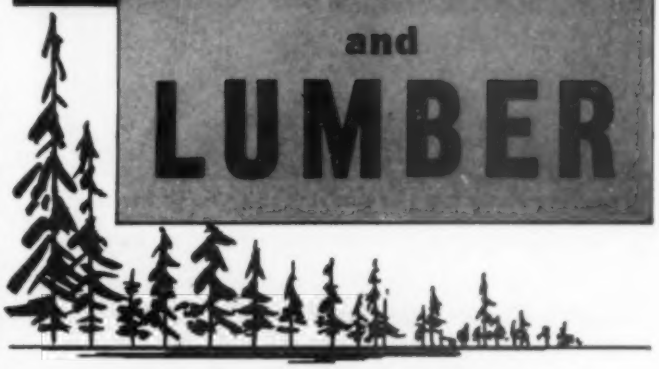
Specialists

IN

VENEERS

and

LUMBER



- AMERICAN WALNUT
- CHERRY
- STREAMLINE WHITE OAK
- MAPLE

AMOS-THOMPSON
CORPORATION

EDINBURG, INDIANA

attained with just one unit. The thin-wall stainless-steel temperature sensing bulbs of the two controllers are installed 2½' from each end of the platen close to the surface so the bulbs can respond quickly to temperature variations and maintain accurate control. A dust-tight and splash-tight housing, standard with the Fenwal units, encloses and completely protects the controller mechanism against plant dust and liquids.

The counter tops are laminated in a five-step operation totalling 15 minutes. These steps are:

1. Preheat Formica for backsplash section. The two-man crew inserts the Formica sheet, face down, between the platens to a depth of about 7". Type 11 Formica, a special forming grade, is used. The platen is maintained at 313 F ± 2 degrees by the Fenwal controllers. After the 15-second heating cycle, as indicated by an automatic-reset timer, the platens are opened and the sheet is immediately transferred to the backsplash postforming press. (In cold weather, when the Formica is chilled, it is usually necessary to lengthen the heating cycle by a few seconds).

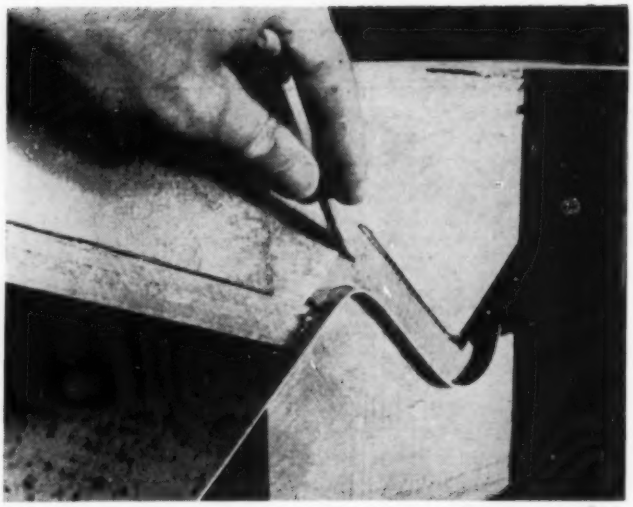


Fig. 2. Close-up of the laminate sheet postformed to the backsplash core in the press. Accurate heating is especially important for forming the ½" radius curvature at the top edge of the core since the plastic sheet is more vulnerable to splitting when stretched around tight-radius outside bends. Pencil points to ¾" radius inside bend at base of core.

2. Postform over the backsplash. The backsplash press is located directly behind the crew, enabling them to transfer the laminate from the contact heating machine into the postforming dies immediately simply by flipping the sheet over to insert the heated edge face up into the dies. Previously the helper has loaded the press with the backsplash core, freshly coated with urea-resin No. 185 glue. The pneumatic press forces the sheet to the shape of the backsplash under 80 psi. working pressure. After a 1-minute cure in the press, the laminated backsplash is removed and the overhang is trimmed off with a surface-trim cutter equipped with a carbide-tipped chamfering bit.

3. Preheat Formica for front-nosing section. To laminate the front nosing, the front edge of the laminate sheet is first preheated in the platens for the 15-second cycle at 313°F. Notice in Fig. 3 that the contact heating machine is located just 6" in back of the front-nosing forming press. This arrangement permits the crew to stand at the press and push the leading edge of the Formica into the contact heating platens and then, without shifting their positions, pull the heated strip of Formica forward into the press after the preheating cycle.

Edmont Case No. 625: For spraying and glueing furniture, Edmont recommended a super flexible plastic coated glove (No. 412 Snorkel). It outwore the rubber glove previously used 3 to 1 and provided greater dexterity.

Outwear rubber gloves 3 to 1

No. 412
12" fully coated gauntlet

In case above, the Edmont recommended glove wore 3 times longer, and reduced glove costs, because it fit the job. Its vinyl coating has an outstanding wet grip and excellent resistance to abrasion and snagging. Its 2-piece jersey liner, wing thumb and curved fingers provide unequalled flexibility, hand freedom and comfort.

Free Test Offer To Listed Firms: Describe your operation, materials handled, temperature condition. From more than 50 Edmont types, we will recommend the glove that fits your job and supply samples for on-the-job testing.

Edmont Manufacturing Company
1246 Walnut Street, Coshocton, Ohio
In Canada write MSA, Toronto

Edmont
JOB-FITTED
GLOVES

BIRDS EYE VENEER CO.

SINGLE PLY VENEERS · ALL NORTHERN HARDWOODS

ROTARY CUT · · · · · SLICED · · · · · HALF ROUND

BeVeG VENEERS

BIRDS EYE · CURLY & PLAIN HARD MAPLE
NORTHERN BROWN ASH · NORTHERN RED OAK
BIRCH · CORK WHITE PINE · BASSWOOD · ELM

P. O. BOX 317

Escanaba, Mich.

Fig. 3. Preheating the laminate sheet before postforming it to the bull-nose front edge. Convenient layout of Bechtold equipment permits the sheet to be inserted through the bull-nose forming dies (at right elbow of operator in foreground) into the heating machine and then simply pulled back about 1' for seating onto the blued bull-nose core in the dies.

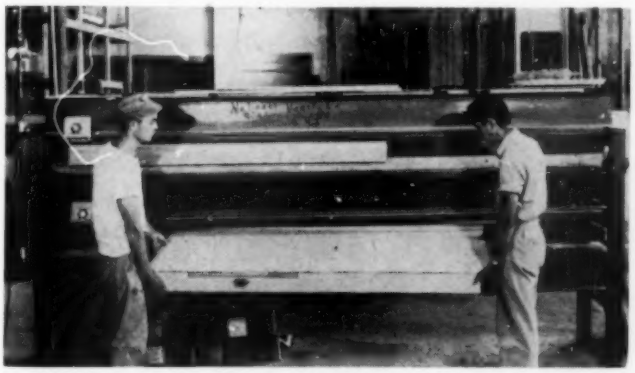


Fig. 4. Final step is to laminate the sheet to the flat plywood undertop in this two-tiered press at 150° F. and 20 psi. Laminating pressure is obtained by inflating a row of manifolded 4" fire hoses, the first of which is visible in the upper tier. The two-tier press permits staggering the 10-minute cure cycle to handle a new top every 5 minutes.

4. Postform over front nosing. The preheated Formica is pulled forward and the heated section seated over the nosing, a crayoned mark on the face of the sheet aiding in the positioning. Before the preheating cycle, the helper has loaded the press with a bull-nose core and a plywood under-top, both freshly glued. The press is then engaged at 80 psi. and a by-pass forming die wraps the plastic sheet over the nosing. During the curing cycle the backsplash is nailed to the plywood under-top, completing the structural assembly of the top.

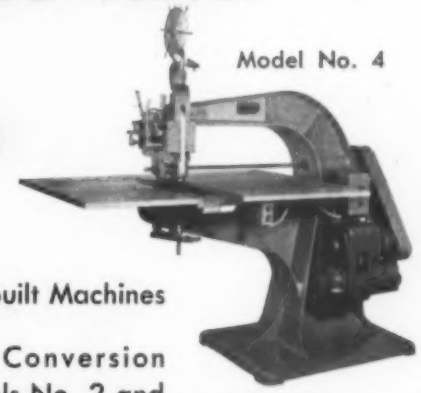
5. Laminate flat section of the top. The final step in the process is to laminate the plastic to the flat portion of the top. After the assembly is removed from the nosing press, and the excess plastic trimmed away from the nosing, the assembly is transferred to the two-tiered laminating press (Fig. 4). This press is heated to 150°F. and operates on a working pressure of 20 psi. The pressure is applied by inflating a row of collapsible tubes, which are actually 4" fire hoses capped at one end. When these are inflated, they press the top against the heated platen to set the glue.

This curing cycle takes 10 minutes, but since the press has two tiers, one top can be removed every five minutes. This gives the press the capacity to handle the output from the postforming operations, which take an aggregate of 5 minutes per top!

Tops in its Field!

DENNIS Veneer Taping Machine

Model No. 4



- New and Rebuilt Machines
- Modernizing Conversion Kits for Models No. 2 and No. 3
- Repair Parts in Stock

* Write for Quotations and Prices.

Also Manufacturers
of the Model 1000 Continuous Feed Veneer Jointer

THE VENEER MACHINERY CO.
314 Straight Ave., S. W. Grand Rapids, Mich.

Only All-Purpose Hog in the World

Remarkable Montgomery

BLO-HOG

Patents Pending

Eats Up Everything!

Pine, oak, gum, hickory, elm, wet veneer, round-up, sandy bark. Conveyor-fed. No attendant needed. Positively protected against major damage from tramp steel. All connections locked—nothing can shake loose. Maintenance costs amazingly low.

(From an unsolicited letter): "In first day of operation a section of log return haul, about 3' of 65# railroad rail broke and went through the hog. Repair time on the hog was 3 hours to remove shear pins and replace, build up anvils and reassemble. I know of no other hog that would have taken this abuse and be even repairable." (Name on request.)

C. I. T. Terms Available
Write for bulletin and details

JACKSONVILLE BLOW PIPE CO.
P. O. Box 3687 • Jacksonville, Florida
Sumner Iron Works, Everett, Washington, West Coast Rep.
Canadian Sumner Iron Works, Ltd., Vancouver, B. C., Can. Rep.

Industry Notes

New Office For Fastener Corp.

Fastener Corporation, manufacturers of Duo-Fast industrial stapling machines, has moved its offices to a new building. It is located adjacent to Fastener's manufacturing buildings, on a 30 acre industrial site in Franklin Park, Illinois.

The building is of ultra-modern design, both inside and out. Ninety per cent of the structure's facade and back wall is glass. The balance is crab orchard stone. The interior furnishings are in keeping with the building's modern design.

The office proper occupies the upper level, with office spaces arranged around the periphery of the building. Each has natural lighting from the floor-to-ceiling windows. A sunken garden occupies the center area of the office interior.

Year around working comfort is assured by a fully-automatic heating and air-conditioning system in this new Fastener office building at 3702 River Road, Franklin, Illinois.

Robert S. Black

Robert S. Black, president of Black Brothers Co., Mendota, Ill., died at his home on November 12. Mr. Black, with his brother John, founded the firm which manufactures gluing, clamping and laminating equipment.

Arthur K. Hanchett

Arthur K. Hanchett, former president and director of the Hanchett Manufacturing Co., Big Rapids, Mich., and Portland, Ore., died after a prolonged illness in mid-October. Mr. Hanchett had been president of the company from 1927-46 when he retired to serve on the board of directors.

His son, Kent S. Hanchett, is now serving as president.

New Consulting Service

George J. McNew, for four years vice-president of A. Brandt Co., Fort Worth, Texas, furniture manufacturer, has formed his own management consultant firm. The business is called Geo. J. McNew, Consulting Management Engineers, and his offices in the Shepherd Building, 3475 W. Rosedale in Fort Worth, Texas. One of the principal areas of service of the firm will be to the furniture and woodworking field.

The consulting firm will specialize in incentive programs, inventory control, human relations, production scheduling, warehousing, shipping and many other phases of management.

Kitchen Cabinet Makers Lay Future Plans

Adoption of plans for intensive promotion of factory-engineered wood kitchen cabinets in 1958 highlighted the second annual convention of the National Institute of Wood Kitchen Cabinets at French Lick, Ind., during October.

Election of officers and directors, committee reports and assignments, the welcoming of new members and a forum on the future of the industry also were features of the meeting, attended by 90 members and guests.

The promotion plans outlined will embrace three major approaches:

1. Publication and distribution among home builders of a new booklet pointing out the advantages of factory-engineered wood kitchen cabinets.

2. Distribution of placards to builders for use in identifying factory-engineered wood kitchen cabinets used in model homes.

Scarfing Douglas Fir with solid Kennametal Knives.

Scarfing operations demonstrate advantages of KENNAMETAL* KNIVES

By switching to Kennametal tungsten carbide knives for scarfing the ends of 2 x 10 Douglas fir lumber, Timber Structures, Inc., Portland, Ore., increased production of large trusses and beams, reduced knife maintenance and improved surface finish required for gluing.

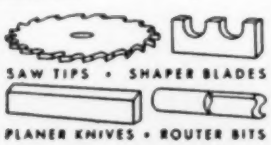
Two cutterheads are used. One gives a rough hogging cut. The other finishes the scarf, which must leave the lumber surface smooth enough for a good glue joint. Steel knives had to be honed every four hours, removed and changed every 8 hours.

Kennametal Knives saved 7½ man-hours downtime every 24 hours of operation. Production has been increased from 5,500 to 8,000 scarf cuts every 16-hour period. It is necessary to regrind Kennametal Knives only once a week, after a total of 10 eight-hour shifts.

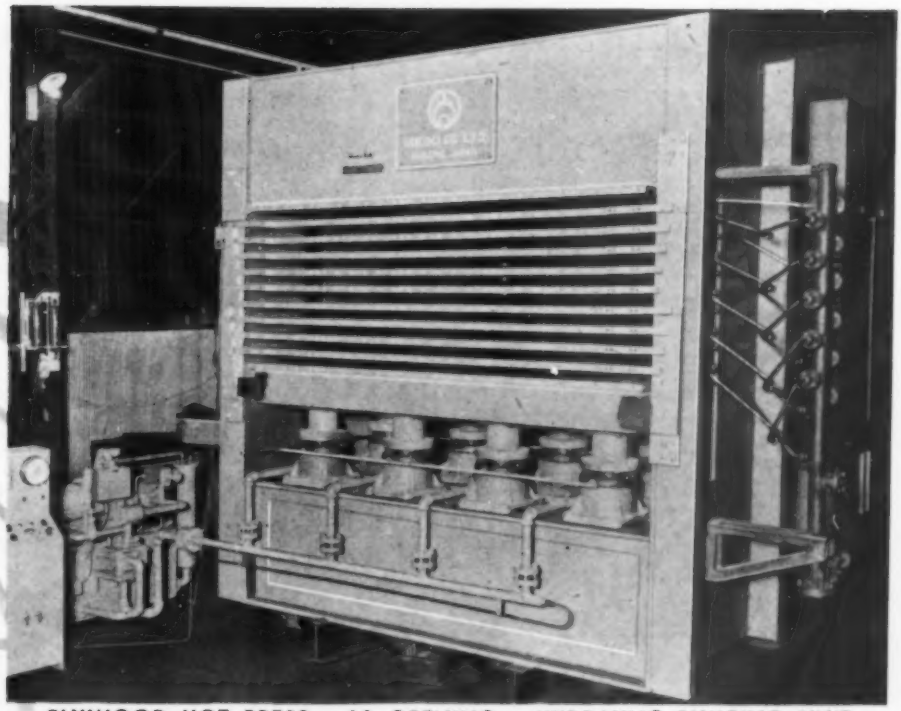
This is only one of many operations where Kennametal Knives are out-performing all others. If you haven't tried Kennametal knives, or if you would like engineering or carbide maintenance information, write KENNAMETAL INC., Latrobe, Pa.

*Trademark

C-3063



INDUSTRY AND KENNAMETAL ...Partners in Progress



PLYWOOD HOT PRESS - 10 OPENING - HYDRAULIC PUMPING UNIT

MEIKI

from selected logs.....
SUPERIOR VENEERS & PLYWOOD

MEIKI PRESSES

used throughout the world
wherever superior veneers
and plywood are produced

MEIKI CO., LTD.
Nagoya, Japan

West Coast Area
Pacific Wood Products Co.
Statler Center, 900 Wilshire Blvd.
Los Angeles 17, California

Mid-Northern United States Area
Transatlantic Machinery Company
155 King Street East
Toronto, Canada

British Columbia Area
Nicholson Murdie Machines
327 Harbor Road
Victoria, B.C.

3. Consumer publicity in newspapers and magazine, encouraging home buyers to specify factory-engineered wood kitchen cabinets. Institute members will be urged to identify their cabinets with the institute emblem, and the public will be told to look for the emblem as a mark of quality construction in cabinets.

President R. C. Chapman, secretary of Mutschler Brothers Company, Nappanee, Ind., was re-elected, as were First Vice-President H. J. Scheirich, president of H. J. Scheirich Company, Louisville, Ky.; Second Vice-President Fred E. Bissell, Jr., vice-president of Carr, Adams & Collier Company, Dubuque, Ia.; and Secretary J. A. Stein, president of Whitehall Cabinets, Inc., East Rockaway, N.Y.; Arthur M. King, vice-president of Wood Products Div., the Mengel Co., Louisville, Ky., was chosen as treasurer.

Combined Inspection & Kiln Drying Clinic

A combined lumber inspection and kiln drying clinic will be held at the University of Tennessee, Knoxville, Tenn., Dec. 12-14, 1957. The clinic will be sponsored by the university through its Division of University Extension, and will be conducted by Mr. Lillard C. Nicely and Mr. John Devine.

Although the clinic is especially adapted to the needs of inspectors and dry kiln operators, managers, salesmen, superintendents and others will find it very profitable to attend.

The instructors for the clinic are the foremost authorities in their respective fields. Mr. Nicely's discussion will include recent changes in inspection rules. Mr. Devine will deal with the most recent developments in the art of kiln drying, use of high temperatures, new developments in Germany and the economics of drying.

Additional information may be obtained by writing to Roy F. Center, Jr., Coordinator of Conferences, University of Tennessee, Knoxville, Tenn.

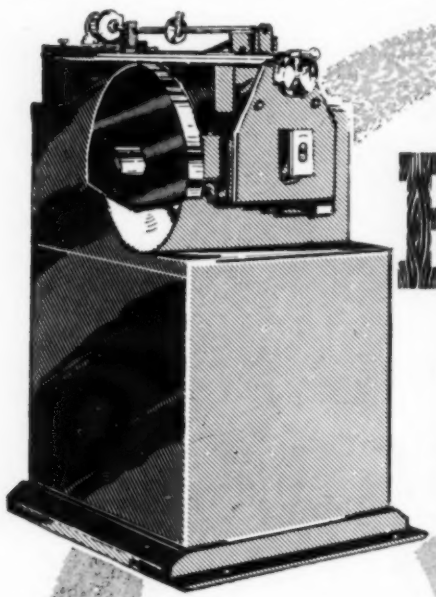
Woodworking Machinery Show

Interest continues to grow in the American Woodworking Machinery & Equipment Show set for May 13-17, 1958, at Winston-Salem, N.C. This event is sponsored jointly by the Woodworking Machinery Manufacturers Association and the Southern Furniture Manufacturers Association.

This is believed to be the first time in the history of machinery shows that prospective buyers have participated in the planning and shared in the cost of producing a machinery show. It reflects the eagerness of furniture manufacturers to see and to buy machines that will increase production, reduce costs and improve quality. Manufacturers of woodworking machinery and equipment have responded quickly to the opportunity of showing their machines in action to the thousands of prospective buyers who will be on hand to see the latest developments in American woodworking machines.

All spaces allotted to machinery have been contracted for and assigned to the following companies:

Auto-Nailer Co.
Bell Machine Co.
Black Brothers Co., Inc.
Boulingny Company
Ivan H. Bradley & Son Co.
Buss Machine Works
Curtis Machinery Corp.
Dependable Machine Co.
Dewalt, Inc.
Alexander Dodds Co.
G. M. Diehl Machine Works
Ekstrom, Carlson & Co.
Enterprise Company
Fjellman-American, Inc.
J. A. Fay & Egan Co.
General Equipment Exchange
Handy Manufacturing Co.
Hawker Manufacturing Co.
Industron Corporation
Irvington Machine Works
Kohler-Joa Corporation
J. M. Lancaster, Inc.
Mereen-Johnson Machine Co.
Mattison-Greenlee Service Corp.
Moak Machine & Tool Co.
J. M. Nash Company, Inc.
Newman Machine Company, Inc.
Northfield Foundry & Machine Co.
Oakley Co., Inc.
Onsrud Machine Works
Oliver Machinery Co.
C. O. Porter Machinery Co.
Powers Wire Products Co.
Powermatic Machine Co.
Rayband Electronics, Inc.
J. S. Richardson Co.
B. M. Root Company
Delta Power Tool Div.,
Rockwell Manufacturing Co..
Solem Machine Co.
H. B. Smith Machine Co.
Sheboygan Machine Co.
Stetson-Ross Machine Co., Inc.
Tannewitz Works, Inc.
James L. Taylor Manufacturing Co.
Timesaver, Inc.
Tri-State Machinery Co.
Union Tool Corporation
Baxter D. Whitney & Sons, Inc.
S. A. Woods Machine Co.
Wysong and Miles Co.
Yates-American Machine Co.



SPECIFY

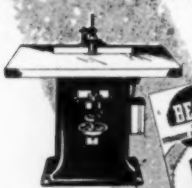
BEACH

the only all electric automatic

STRAIGHT LINE CUT-OFF SAW*

TILTING TABLE SAW

DOUBLE CUT-OFF SAW



SHAPER

The safest automatic feed ever offered—all electric—no air or hydraulics used! New mounting principle assures straight line action throughout the stroke—on lightest or heaviest work.

Only Beach offers all these features in a Straight Line Cut-Off Saw*:

- adjustable pushing power on the stroke
- foot pedal control for single or continuous operation
- selective forward feeding speeds with quick return
- quick adjustable stop for length of stroke
- hand or power operated without adjustments
- sealed ball bearings—no oiling or greasing
- built-in saw guards; enclosed ram

Standard 5 HP motor with ½ HP feed motor. Standard machine with 20'' stroke; others to order.

Write today— for full details on Beach all electric Straight Line Cut-Off Saws and the complete line of Beach woodworking machinery.

*Patent applied for

BEACH
MANUFACTURING CO.
MONTROSE, PA.

FINEST SO-HARD SCREWS SINCE 1867

Wood Screws

PACKED WITH QUALITY FROM TOP TO BOTTOM

From a choice variety of head styles to clean sharp threads for longer holding . . . from factory-insured uniformity . . . to a wide, versatile size range*—every So-HARD Wood Screw is your assurance of quality and dependability.

**Range from 3/16 x #0 to 6" x #30 Diameter*

Available in:

STEEL • BRASS • SILICON BRONZE
ALUMINUM • STAINLESS STEEL

FREE! Handy, distinctive 3-color heavy board wall chart showing comparative sizes of wood screws and stove bolts. Write Dept. G for one today!

THE SOUTHINGTON HARDWARE MANUFACTURING COMPANY
Southington, Connecticut • U.S.A.

EXPORT OFFICE: Joseph A. Gross Company, 25 Beaver St., New York 4, N.Y.

Texas Representative For Onsrud

The Woodworking Division of the Onsrud Machine Works, Inc., Chicago, Ill., announces the appointment of the Tri-State Machinery Co., 3000 Commerce St., Dallas, Tex., as representative for Texas and Oklahoma. The Tri-State Machinery Co. will handle sales and services for all Onsrud woodworking machines. Included in the types of equipment offered are Onsrud automatic shapers, table shapers and routers.

Armour Opens Eastern Office

New eastern regional facilities at Lodi, N.J., have been opened by Armour and Company to assure faster and more efficient service for the company's chemical, adhesive, ammonia, coated abrasives and cushioning products customers.

The Lodi installation is connected by direct teletype service with the Armour auxiliaries headquarters in Chicago and with the Coated Abrasives and Cushioning Products divisions, headquarters at Alliance, Ohio.

Located on Meta Lane in Lodi, the new facility is convenient to the metropolitan New York area. It replaces the Armour auxiliaries former eastern headquarters at North Bergen, N.J.

The property is served by a New York, Susquehanna & Western Railroad siding. The Meta Lane installation is also close to U. S. Route 17, about 9 miles west of New York City, affording easy access to main traffic arteries and trucking terminals.

APPOINTMENTS

Aetna Plywood & Veneer Company, Chicago, Ill., has appointed **James T. McGrath** to the newly created position of assistant to the sales manager.

A series of promotions for management personnel of Pack River Tree Farm Products, Spokane, and its affiliated Inland Empire mills, resulted from the recent creation of two new top-level positions. **Mort J. Huetter** has been appointed as production coordinator for the group of mills and Curt McEwan as logging coordinator. **Jack L. Bopp**, general manager of Pack River Lumber Co., succeeds Huetter as general manager of Northwest Timber Co. **Irvin Wentworth** is the new general manager of Pack River Lumber Co.

Donald Cox has been appointed sales supervisor for Armour and Co., Coated Abrasives Division, Alliance, Ohio.

C. A. Norgren Co., Englewood, Colo., has appointed **James A. Kyffin** as director of purchases and traffic.

The Henry Disston Division, H. K. Porter Co., Inc., has made **Archie M. Haines** controller.

Albert C. Wedge has been elected vice-president in charge of manufacturing for DeWalt Inc.

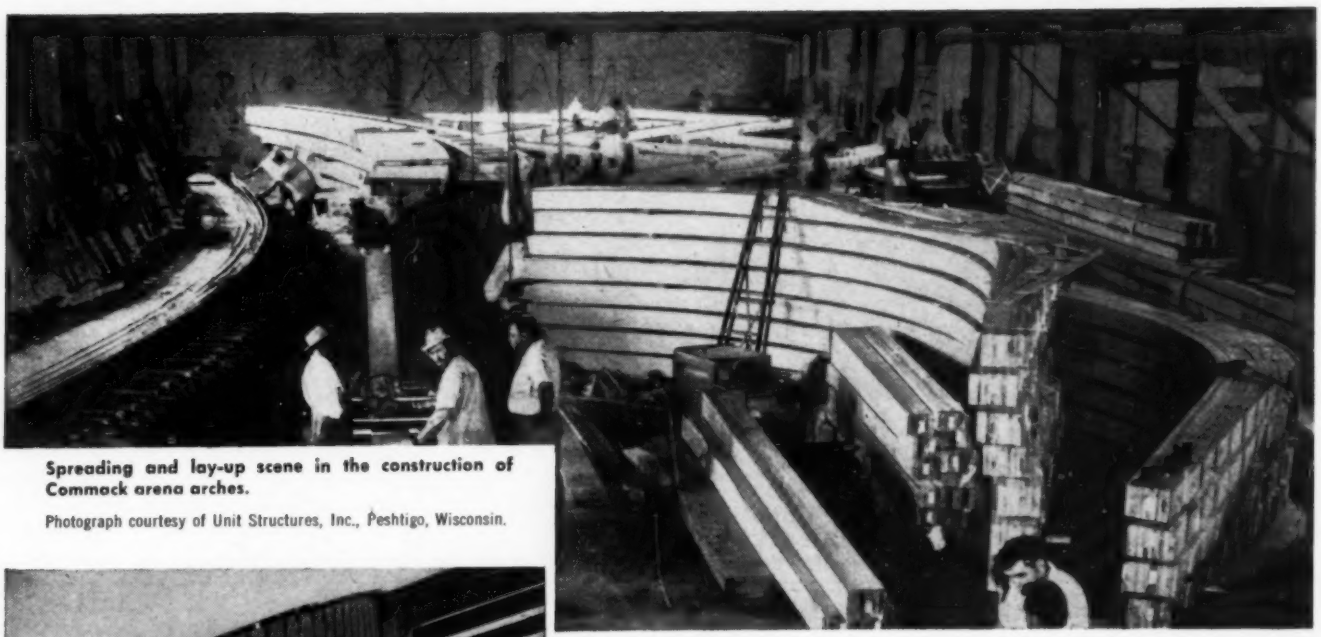
W. W. Hanly, Jr., has been appointed manager of sales for the San Francisco area by the Wood Preserving Division, Koppers Co., Inc.

Georgia-Pacific Corp. has appointed **Elroy C. Carlson** as staff engineer.

Black & Decker Manufacturing Co. announces several changes in personnel. **Leo C. Gehring**, Minneapolis industrial-automotive district manager, has retired and **Raymond L. Mick** will replace him The firm has created a new sales district for the industrial-automotive division. This is to cover the territories of Hawaii and Alaska. **Philo W. Lund**, formerly Seattle district manager, will be the manager. **John R. Anderson** will replace Mr. Lund in the northwest area.

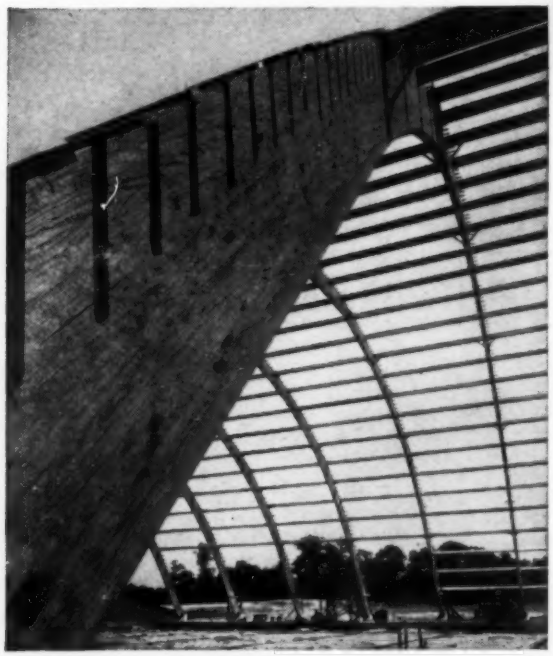
Harry P. Snyder has joined Consolidated Machinery & Supply Company, Ltd., a division of the Siegler Corporation, as vice-president and general manager, heading up sales and marketing of a complete line of quality woodworking tools.

Laminated Construction Timbers
BONDED BETTER
with PENACOLITE® Resorcinol Adhesives



Spreading and lay-up scene in the construction of Commack arena arches.

Photograph courtesy of Unit Structures, Inc., Peshtigo, Wisconsin.



PENACOLITE-laminated arches like these are erected rapidly and economically. Moreover, the natural beauty of wood is preserved in the basic construction. Twelve of these giant arches were erected for the Commack, Long Island arena last summer.

Laminated structural timbers are receiving increasingly wide use in many kinds of building construction—schools, gymnasiums, public arenas and others. The laminated construction of these basic building supports makes them readily adaptable to requirements of size and shape. Furthermore, with their use, the difficult problem of finding single piece timbers large enough to meet specifications is completely eliminated.

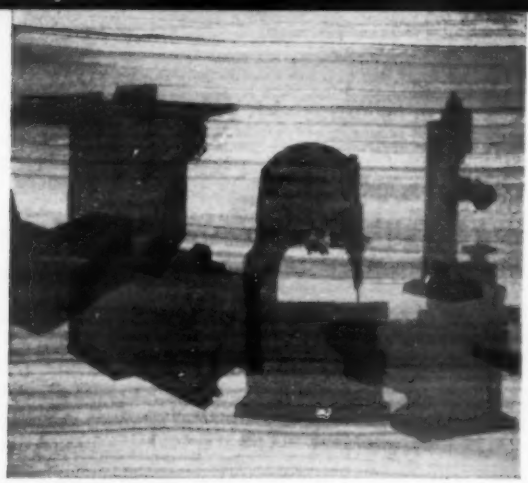
Because of PENACOLITE adhesives' waterproof qualities and great bonding strength, they are specified for many important construction jobs. Bonds made with these specially formulated adhesives resist the shrinking and swelling of wood, and are unaffected by atmospheric humidity and temperature extremes. PENACOLITE adhesives set, even at room temperature, into bonds as strong as the woods they join. They are quickly applied and will not weaken with age or long exposure.

Investigate PENACOLITE Resorcinol Adhesives by sending for our free, illustrated booklet describing their many advantages and great variety of applications. Koppers Company, Inc., Dept. WD-127, Chemical Division, Pittsburgh 19, Pennsylvania.

KOPPERS

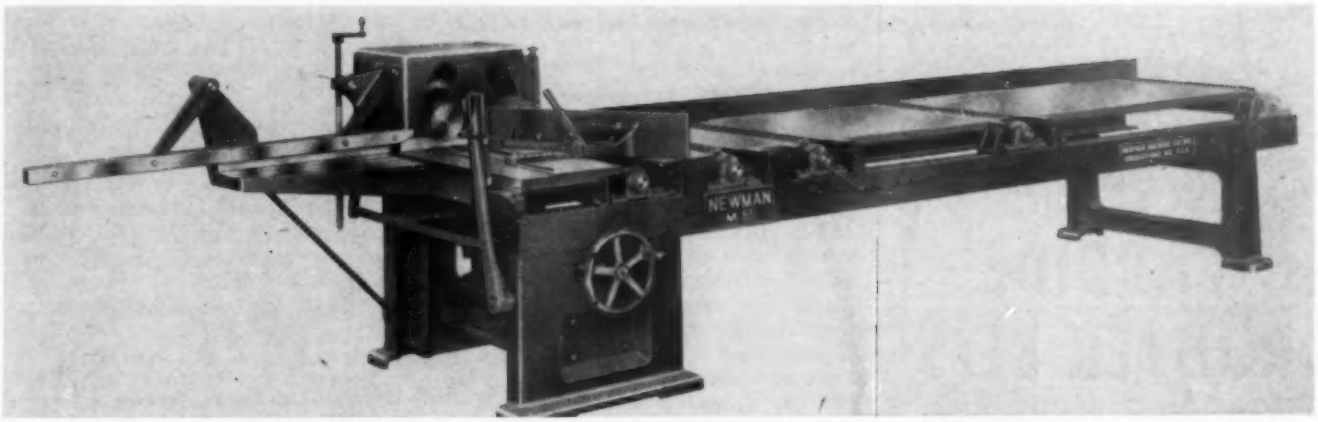
PENACOLITE®

RESORCINOL ADHESIVES



equipment and supplies

Pineapple Feed Table



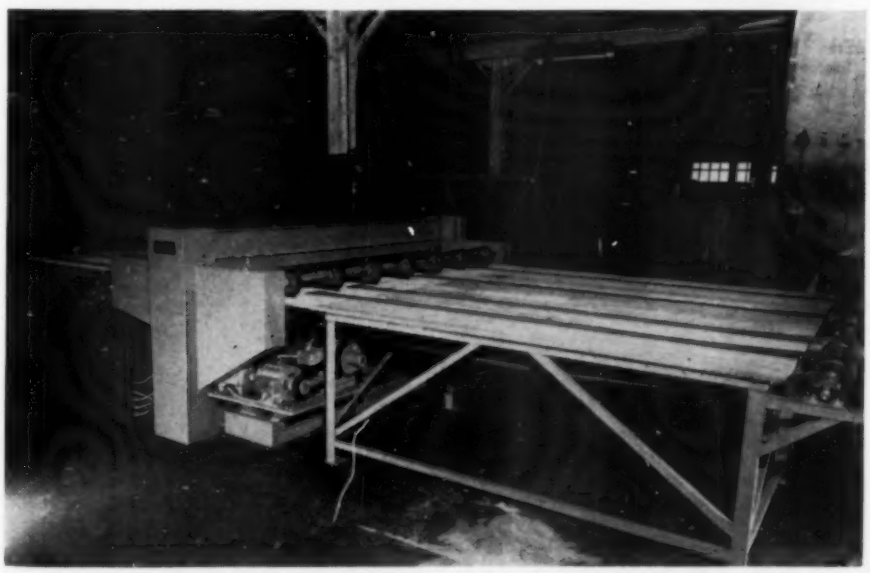
The Newman Machine Company announces a new model, the M-55, automatic pineapple feed table. This machine is designed to automatically feed stock to high speed planers and matchers. The machine is driven directly from the feed shaft of the planer and matcher and keeps stock butted at the fastest rates of speed.

The feed works are driven by a belt from the feed shaft of the planer and matcher and run on ball and roller bearings throughout. The top rolls and bottom outfeed rolls are driven by a combination of heat treated machine-cut steel gears, sprockets and roller chain. Here are some of the features of the new machine: reinforced heavy steel bed plates between threaded rolls; heat treated machine cut steel gears; chill hardened pineapple for long wear; and adjustable angle bumper guide with positive lock.

Additional information about the machine is available from the Newman Machine Co., Greensboro, North Carolina.

Use postpaid card. Circle No. 27

Automation For Dry Veneer Defect Clipping



The Cardwell Auto-Clip has been developed to speed up the preparation of dry veneers prior to jointing and splicing. It has been designed to rapidly, accurately, and automatically clip out splits, knots and other defects that show up when the veneer is dried.

This is done by firmly holding the sheets of veneer between infeed and outfeed chains while it passes under the clipper knife. Just before the veneer reaches the knife, a mark previously placed on the veneer, signals the machine to make the cut. After the cut is made, both pieces of veneer remain in the grip of the chains to insure that the cuts will be parallel.

Two operators are required. One operator places the veneers on the live infeed table and marks where cuts are required; he then starts the veneers into the feed chains. He is then free to pick up and mark the next sheet. The Auto-Clip automatically makes the cuts and transports all the veneer to the grading table. The second operator removes the usable veneer and the trash falls off the end of the live table into a truck or conveyor.

Some of the many new mechanical and operational features incorporated in the Auto-Clip are: (1) At least **doubles** the production per man hour over conventional Clippers. (2) Reduces scrap by more accurate cutting—cuts closer to defects. (3) Reduces scrap by making all cuts square and parallel—

Got the Point?

TOOLS FOR CRAFTSMEN

GREENLEE

CARBIDE ROUTER BITS

OUTWEAR ORDINARY BITS MANY TIMES!

Constructed with a super-hard grade of carbide specially selected for high-speed operation. Careful brazing of carbide insert to *high-speed* steel bodies eliminates tendency to vibrate or give. Correct cutting angle provides fast, easy cutting. Solves routing problems and economizes simultaneously. Write for Bulletin M-185 today!

WRITE FOR CATALOG 34M

Easy-to-file, 20-page catalog useful in ordering Greenlee Tools. All carry famous Greenlee guarantee of quality. Write for name of Greenlee distributor in your area.

GREENLEE TOOL CO.

Division of Greenlee Bros. & Co.

2142 HERBERT AVE.

ROCKFORD, ILLINOIS

a big advantage when veneers are fed into endless splicers. (4) Reduces operator fatigue—the operator does not have to work in synchronism with the machine and can move from one place to another if defects are close or far apart. (5) Feed chains designed to effectively remove narrowest veneer trimmings.

Additional information is available from the Cardwell Machine Co., Richmond, Va.

Use postpaid card. Circle No. 33

New Lacquer

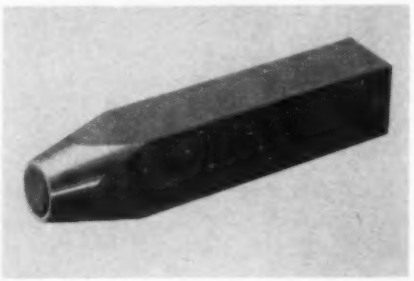
The Union Chemical Corp., 410 Frelinghuysen Ave., Newark 5, N.J., has developed a transparent lacquer to bring out depth of wood. The formula has a combination of solvents to keep the finish on top. Union will send free samples of Lac-R-100.

Use postpaid card. Circle No. 29

Diamond Jointing Stones

To complement their line of solid carbide knives, Lemmon & Snoap, manufacturers of carbide tipped saws and solid carbide knives, have recently introduced a line of diamond jointing stones which will be carried in stock in various sizes. With the wide and constantly increasing use of carbide cutting knives for various machines in the woodworking industry and the great benefits derived from light jointing of them between grindings the great need for a product of this type is obvious. These benefits, among others, are smoother cuts, faster and much more production between grindings.

Complete details, including prices and various sizes available may be obtained



from Lemmon & Snoap, 286 Bridge Street S. W., Grand Rapids, Michigan.

Use postpaid card. Circle No. 30

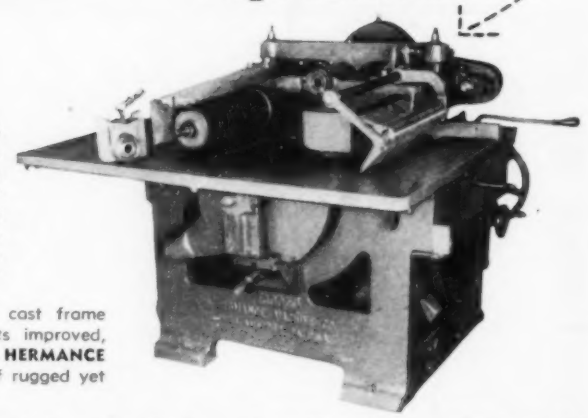
Electric Power Strapping Machine

A new, electric power strapping machine is being offered by Signode Steel Strapping Company. First of its kind, the new Signode Model AE uses a small, 115 V motor to provide exact and unvarying tension with push button ease. Then, a single stroke hand lever seals and cuts the strap.

Designed for continuous duty under the most rigorous of work conditions, the Signode Model AE produces per-

SPEED and ACCURACY are Yours!

with versatile HERMANCE rip saws



MADE TO FIT YOUR NEEDS . . . **HERMANCE** adjustable roll, self-feed rip saws are made to fit each particular need for accurate, high-speed ripping, engineered to produce strips at any speed the operator can keep pace with!

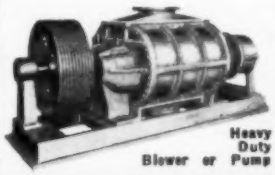
From its massive one-piece cast frame and heavy duty table to its improved, quick to regular rip guide, a **HERMANCE** Rip Saw is built for years of rugged yet trouble-free service.

HERMANCE RIP SAWS are made to stand up to the user's scrutiny for fast production at rock bottom operating costs, with a minimum of repair and upkeep expense! **HERMANCE** adjustable roll, self-feed **RIP SAWS** are made to fit your particular needs . . . you have your choice of table size, motor size, feed drives and feed rates, and your choice of collar space on the arbor, as well as, a variable speed drive for any feed rate from 60 to 180 feet per minute with a simple turn of the wheel.

Inquire now for full information about the HERMANCE SAW that'll fill your needs . . .

HERMANCE Machine Co.

WILLIAMSPORT PENNSYLVANIA



Heavy Duty Blower or Pump

Cut Your Costs 50% with . . .

MEYER FANS BLOWERS EXHAUSTERS

Type RCGH—High Pressure Blower

NEW AND REBUILT FROM THE WORLD'S LARGEST STOCK

ROTARY-POSITIVE BLOWERS

Make	Size	Type	Mx. Cap.	Mx. Prs.
Connersville	8x20	RS	1½	600
Roots-Con.	24	AF	2	36
Roots-Con.	36	AF	2	70
Roots-Con.	3	NS	2	76
Connersville	20x60	SF	2½	6040
Sutorbilt	2520	SD	3	16
Roots-Con.	22	XA	3	16
Sutorbilt	2520	SD	3	69
Roots-Con.	47	XA	3	124
Roots-Con.	47	AF	3	124
Sutorbilt	4L	SD	3	132
Roots-Con.	59	AF	3	200
Roots-Con.	615	AF	3	366
Roots-Con.	717	AF	3	650
Connersville	10x15	SD	3½	890
Connersville	8x15	B	4	530
Roots-Con.	17B	XSB	5	40
Roots-Con.	55	XAS	5	96
Roots-Con.	14x21	HD	5	2130
Sutorbilt	3L	SD	6	31
Sutorbilt	4M	SD	6	76
Sutorbilt	5M	SD	6	115
Roots-Con.	22x36	HD	6	5500
Roots-Con.	42	XAS	7	35
Roots-Con.	53	AF	7	70
Connersville	10x12	HD	7	614
Sutorbilt	5H	XB	10	66
Sutorbilt	6H	XB	10	128

TURBO BLOWERS

Make	Size	H.P.	Vol. c.f.m.	Static oz.
Spencer	1007-H	7½	1050	16
Spencer	1007-H	7½	1075	16
No. American	1716-H	7½	1100	16
Eclipse Fuel	6819-10	10	1200	16
Spencer	1010-H	10	1500	16
Spencer	1203	3	325	20
Spencer	1215	15	1675	20
Ingersoll-Rand	24C-223	3	270	24
Spencer	1540	40	3800	24
No. American	332-EE250	50	3700	32
Gen. Electric	3 lb.	10	450	48
Spencer	Spec.	15	420	55
Spencer	Spec.	75	1700	80

STEEL PLATE EXHAUSTERS

Make	Type	Size	Wheel Type	Wheel Diam.
American	E	35	Rim	23
Clarage	IE	15	Open	23
American	E	35	Rim	23
Sturtevant	Des 2	40	Rim	24
Bayley	SS	30	SS	25
Buffalo	SP	40	Rim	26
Sturtevant	Des 2	35	Rim	27
Garden City	SP	30	Cycloid	28
Cyclone B. P.	SS	40	SS	29
Sturtevant	Des 2	45	SS	32
Sturtevant	Des 1	55	Rim	33

CENTRIFUGAL FANS

Make	Size	Type	Wheel Diam.	Inlet Diam.
Clarage	1¼	HV	15	14⅞
Bayley	15	M	15	15
Sturtevant	2	Des. 3	15	15
Buffalo	2½	CL	15	15⅝
Buffalo	2½	M	16½	17¼
Sturtevant	3	Des. 3	17	16½
American	182	M	18½	18⅝
Sturtevant	4	Des. 3	18½	20⅝
Garden City	4	M	21	23
American	3½	AHS	21	21
Buffalo	4	SL	22	22½
Garden City	4	M	22	23
Clarage	1¾	W	23	23⅝
Clarage	1¾	HV	23	22⅝
Buffalo	4	LL	24	25
Buffalo	4	CL	24	25
Buffalo	4½	SL	25½	22
Sturtevant	6	Des. 3	27	27½
Ilg	80	B/C	26½	26½
American	4½	M	27	28
Sturtevant	75	B/C	27¼	29¼
Clarage	2¼	W	29¼	30⅝
Clarage	2¼	HV	29¼	30⅝
American	5	Suroco	30	32
Sturtevant	7½	M	33	35½
American	5½	HS	33	35
Sturtevant	85	5V	35	36⅝
New York	36	ME	36	39½

Steel Plate Exhauster, ARR. I

Type "D" Retoclone Dust Collector

Phone INdependence 3-5127

Write for complete stock list Today

WM. MEYER & SONS

8297 NILES CENTER ROAD — **SKOKIE, ILLINOIS**

Coming . . .

1958-59 biennial edition of

hitchcock's WOOD WORKING directory

. . . an indispensable working tool for the ENTIRE WOODWORKING INDUSTRY.

WHERE BUYERS LOOK WHEN BUYING DECISIONS ARE MADE
WHERE SUPPLIERS SELL THEIR PRODUCTS AND SERVICES

. . . the ONLY DIRECTORY serving the ENTIRE WOODWORKING INDUSTRY!

This 60th Anniversary Edition will be published in standard 7" x 10" magazine format with hard book covers and binding. It will list **who makes it**—over 800 classifications covering woodworking machinery, equipment, supplies and services—**trade names . . . manufacturing addresses . . . helpful information, etc.**

If you sell to the woodworking industry, YOU BELONG IN HITCHCOCK'S WOOD WORKING DIRECTORY. Get all the facts today . . . SEND FOR COMPLETE INFORMATION!

CLOSING DATE: APRIL 10, 1958
PUBLICATION DATE: MAY 10, 1958
TOTAL DISTRIBUTION: 12,100

NEW FEATURES:

- ***NEW standard 7"x10" magazine format***
- ***NEW MONEY-SAVING rates on catalog inserts***
- ***NEW die-cut thumb INDEXES***
- ***NEW 1" BONUS PRODUCT LISTING ADS for display advertisers***
- ***NEW product listing CLASSIFICATIONS—over 800***

hitchcock publishing company

THE PIONEER OF CONTROLLED CIRCULATION
WHEATON, ILLINOIS
SINCE 1898

Two Good Reasons

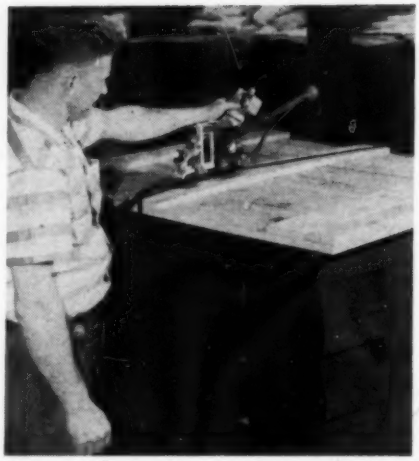
WHY YOU NEED

1. Mend-All wood plastic does not shrink away from material to which it is applied.
2. It is and acts like a grainless wood of putty-like consistency for filling cracks and defects in lumber.

Mend-All wood plastic stands up like wood and also takes a stain.

Ask your supply house for it. It is not the Advertising, but the Quality at the right price that counts.

GILL CHEMICAL PRODUCTS, Inc.
366 Oakland St., Brooklyn 22, N.Y.



fect, high tension packages without worker fatigue. The last package at quitting time is as secure as the first or any other package produced on any shift. A touch with a wrench on conveniently located hex knob sets and holds calibrated tension.

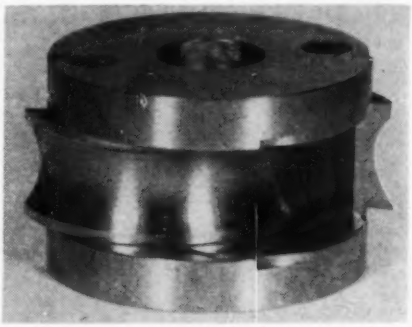
Skids, crates, bundles, boxes or bales may be secured with 5/8" or 3/4" Signode strap at up to 1600 pounds tension on every strap used.

For more information write Signode Steel Strapping Company, 2600 North Western Avenue, Chicago 47, Illinois.

Use postpaid card. Circle No. 31

Circular-Cutter Shaper Head

A new high speed shaper head is being offered by Graycon Tools, Inc., of Wabash, Indiana. This head is equipped with circular cutters that have several distinct advantages. The circular construction adds to the strength and safety of the cutters. This is noted in the pencil industry where these knives, 3" and over on the cutting edge, are operated at spindle speeds in excess



of 10,000 r.p.m. Radial clearance gives greater backing to the cutting edge and consequently makes them particularly adaptable to formed carbide tips.

Another feature is the easy setup and alignment of the cutters in the cutterhead. This is done against a positive gauge which results in holding a definite cutting circle to conform to the diameter of the rub collar. Although these circular cutterheads lend themselves mainly to use on automatic and hand feed shapers, they also work to advantage on the smaller high speed molders.

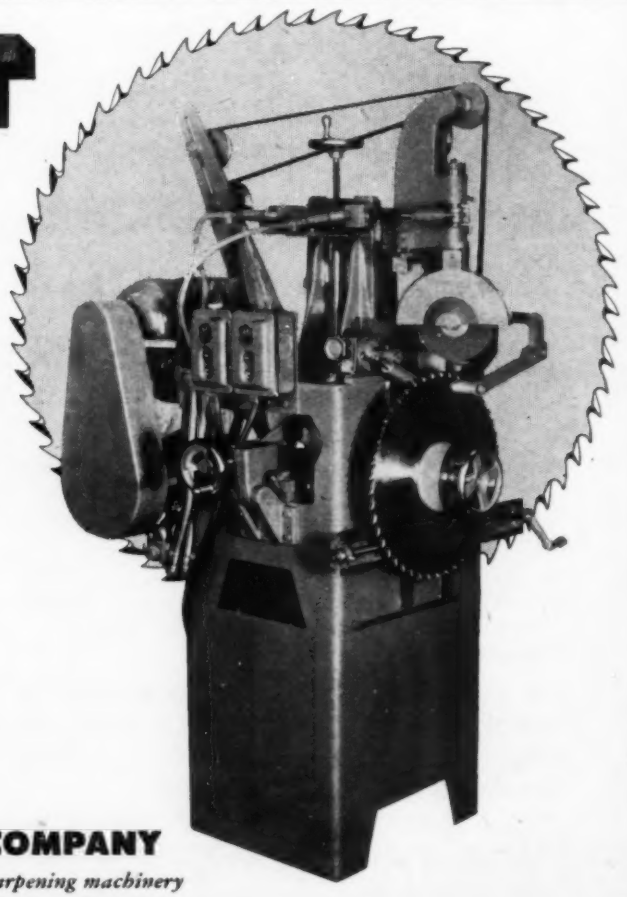
A folder describing this cutter more in detail may be obtained by writing Graycon Tools, Inc., Wabash, Indiana.

Use postpaid card. Circle No. 32

HANCHETT

automatic
circular saw sharpener

MODEL 724
with air operated shift
and
NEW **PEDESTAL MOUNTING STAND**



Low-cost, full-automatic sharpening for SMOOTH TRIM, RIP and CROSS-CUT saws from 6" to 36" diameter . . .

CHECK THESE PRODUCTION FEATURES:

- Accurate Action.
- New Mechanism, controls bevel grind on cut-off teeth.
- Double Side Head, vertical — horizontal.
- Adjustable Tooth Cam.

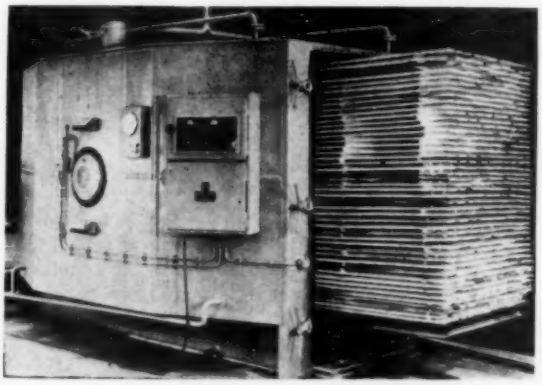
Write us about our complete line of Saw Sharpeners for all types and sizes of Saws.

COVEL SAW SHARPENERS HANCHETT ANN ARBOR

HANCHETT MANUFACTURING COMPANY
World's largest manufacturer of knife grinding and saw sharpening machinery
MAIN OFFICE — Big Rapids, Michigan **WEST COAST — Portland 1, Oregon**

HILDEBRAND DRY KILNS

ALSO FOR THE FURNITURE MANUFACTURER.



Hildebrand Lilliput Dryer HD 74/III as a complete machine

GREATER PRODUCTION
BETTER PROCESSING
FASTER DELIVERY

with our modern lumber drying machines.

We supply all-metal machines ready for connection from 400 board feet up to large capacity units with electric, steam or hot water heating, as well as equipment for installation in self-built drying compartments.

ROBERT HILDEBRAND CANADA LIMITED
163 ROSELAWN AVENUE, TORONTO 12, ONT., CAN.

UP PRODUCTION— *Cut Costs!*

PLANER KNIVES
MOULDER KNIVES
SHAPER STEEL
JOINTER KNIVES

WITH *Supreme* KNIVES

You step up your production with Supreme Knives. . .milled to exact specifications. . to insure a perfect fit in the machine. Made from the correct alloy steel for your particular job, Supreme Knives work harder. . longer. The expense of early re-sharpening and replacing is eliminated. We design and make Special Knives to your requirements.

VENEER KNIVES
SHEAR KNIVES
CIRCULAR KNIVES

WRITE TODAY FOR YOUR COPY OF THE SUPREME CATALOG NO. E

THE SAW & KNIFE SPECIALTY CO., INC.
6526 CARNEGIE AVENUE • CLEVELAND 3, OHIO

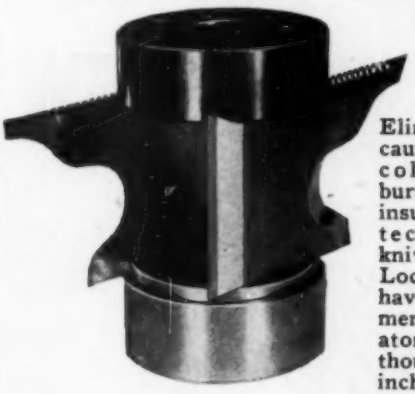
SEND US YOUR CARBIDE-TIPPED
KNIVES
CUTTERS
ROUTER BITS

We will promptly repair, retip and sharpen your Carbide-Tipped tools and get them back to you without delay. Skilled workmen and precision equipment insure fast service and complete satisfaction in restoring cutting efficiency.

PROMPT DEPENDABLE SERVICE

For Safety Sake.

KNOUREK SCHMIDT COMBINATION COLLARS



Ball Bearing
&
Lock Edge

Eliminate friction caused by old style collars, prevent burning of patterns, insure absolute protection against knives flying out. Lock edge collars have screw adjustment enabling operator to set knives to thousandth part of inch.

CHAMPION MITRE LOCK CUTTER

For use on shaper to cut fine, invisible mitre glue joints on cabinet work, furniture, etc. One cutter is all you need to cut male and female joints.

WOODWORKERS
TOOL WORKS
224 S. Jefferson Street
Chicago 6, Illinois

Just a DUO-FAST STAPLE but it can SAVE YOU MONEY!

DUO-FAST AIR TACKERS speed and simplify tacking of backs onto case goods, cabinets, displays.

DUO-FAST
Automatic
Staple Tackers

Just one of the countless jobs speeded and simplified by DUO-FAST Automatic Staple Tackers.

There is a Model to Save You Money

Send for the Duo-Fast Catalog showing the complete line of Staplers, Tackers and Staples.

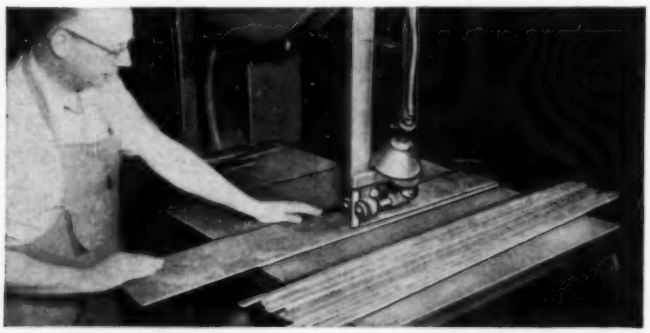
50 Offices in Principal Cities
FASTENER CORPORATION
3752-54 River Road, Franklin Park, Ill.

Starrett®

PRODUCTION-PROVED

BAND SAW BLADES

REGULAR — Fast cutting, economical blades for production cutting and contouring hardwoods and soft woods. Easy to resharpen and reset for long life and low cost.



SKIP TOOTH — Hard edge, flexible back construction with special "skip tooth" design. Recommended for cutting hardwoods, soft woods, fibre, plastics. Never need sharpening.

For sizes, prices and cutting data, write for Bulletin 1043. Address Dept. WW, The L. S. Starrett Company, Athol, Massachusetts, U. S. A.

SINCE 1880 WORLD'S GREATEST TOOLMAKERS

Buy through your industrial distributor. Prompt delivery. Dependable service. Quality products.

Starrett

MECHANICS' HAND MEASURING TOOLS AND PRECISION INSTRUMENTS • DIAL INDICATORS • STEEL TAPES PRECISION GROUND FLAT STOCK • HACKSAWS, BAND SAWS and BAND KNIVES THE L. S. STARRETT COMPANY, ATHOL, MASSACHUSETTS, U. S. A.

Conveyor Dryer

This Hildebrand high capacity conveyor dryer can be used to dry furniture parts. The accompanying illustration shows stained and lacquered Chesterfield and chair frames in the dryer. Note that in order to avoid any manual transport of the furniture, the conveyor belts extend outside the actual dryer. Dryers of this type can be manufactured according to the required output in any sizes with any number of transport belts and channels.

The transport device consists of several steel plate conveyor belts arranged side by side. The number of belts depends on the requirements of the customer. The conveyor belts are separated by partition walls that each belt runs in its own channel and also in that direction which might be the most favorable. The belts are separately driven by an explosion-proof motor with an infinitely variable gear and a range of adjustment of 1:3. Therefore the speeds of the conveyor belts can be increased or reduced independent from each other such adapting to the drying time of any varnish or lacquer.

The heating can be performed by any energy source. Very often steam will be preferred, as it will be mostly available in a woodworking plant. The high air draft guarantees a more than thousandfold change of air in the channel and operates according to the circulating air system. Several axial ventilators—their number depends on the size of the dryer—press the air through the heating registers, the air circulates through the drying channel from the center towards both ends of the dryer where it is sucked in again. The great advantage of this system is given in the fact that the furniture is surrounded by indirectly heated warm air coming from two opposite sides, but the fans must not be of a reversible construction which means a big saving of time, energy, and costs. On the other hand the air current meets already pre-

THIS

NEW

CIRCULAR - CUTTER SHAPER HEAD HAS EVERYTHING

- ✓ 300% more usable knife.
- ✓ Circular construction stronger
- ✓ Operates safely at higher speeds
- ✓ Quick, easy setup against gauge
- ✓ Constant cutting diameter
- ✓ Cutters can be sharpened in head

and

THE PRICE IS RIGHT

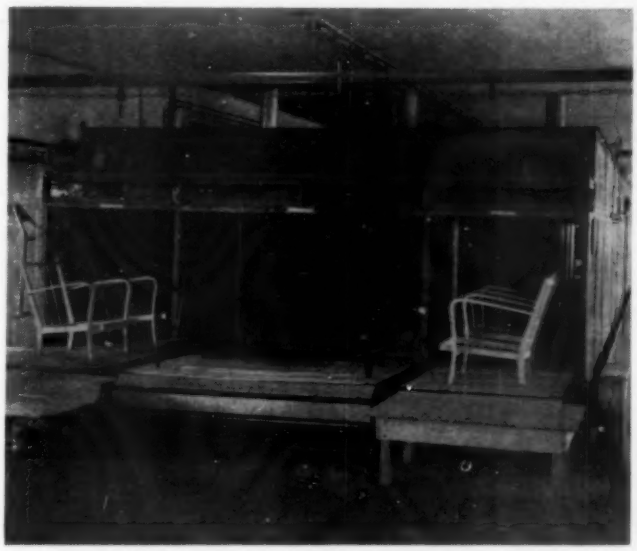
Send for descriptive folder.

GRAYCON TOOLS INC.

WABASH, INDIANA

warmed furniture and half-dried lacquer, as these parts have already passed the dryer half-way and their lacquer is not so sensitive to higher temperatures, allowing higher drying temperatures and shorter drying time.

Each drying channel has two exit air devices adjustable independent from each other and eliminating all circulating



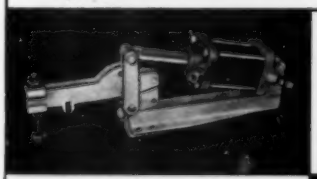
air saturated with dis-solvent vapors. By the arising under-pressure in the channel fresh air comes in from the open channel ends. Therefore the warm circulating air cannot escape through the channel ends and no loss of energy is possible.

Complete information on the Hildebrand dryer is available from Robert Hildebrand Canada, Ltd., 163 Roselawn Ave., Toronto 12, Ont., Canada.

Use postpaid card. Circle No. 34

You asked for it . . .

KNU-VISE has come up with it!



TWO NEW AIR-OPERATED CLAMPS with 800 pound clamping force

AO-800 CLAMP

AODT-800 DOUBLE TOGGLE CLAMP

Because you asked for it, Lapeer's vast line of Knu-Vise clamps now features four distinct groups of air-operated clamps. Two new 800 lb. air clamps have been added to the widely accepted 200, 400 and 1200 lb. air clamps, thereby rounding out the Knu-Vise series. The Model AO-800 clamp is for conventional holding operations—the Model AODT-800 for those difficult mounting situations.

For complete information on these units and the more than 150 other models available, write for catalog today!

Manufacturers of over 150 models of manually and air-operated clamps and pliers

KNU-VISE PRODUCTS LAPEER MANUFACTURING CO.

3044 DAVISON ROAD • LAPEER, MICHIGAN

WESTERN DIV.: 422 Magnolia, Glendale, Calif. • CANADIAN DIV.: Higginson Equipt. Sales Ltd., Hamilton, Ont.

CHECK THE

6 BIG ADVANTAGES

YOU GET WITH **DISSTON**

GENERATED TYPE CUTTER HEADS

1. No lost life in holding device. Generated cutter designed to use all the cutter form for cutting.
2. Generated cutter design gives equal cutter life in 4-6-8-10 or 12 knife heads.
3. Heads dynamically balanced to run smoother without vibration or chatter.
4. Greater throat room—no loading up and no chip marks on work.
5. Built-in chip breakers—no wear on heads from chips.
6. No holders, clamps or gibs—knife changes are quick and simple.

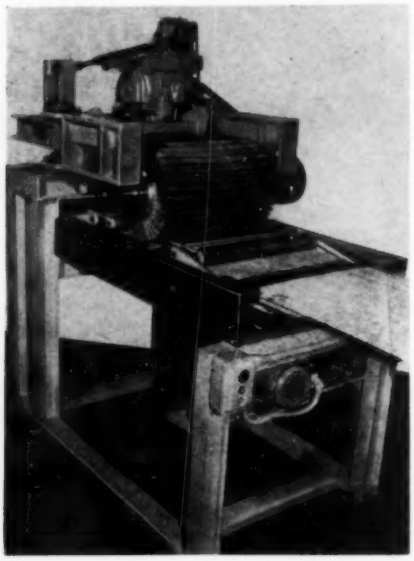
Got a cutter head problem? We'll be happy to supply you with any information you need on the application of Disston Generated Type Cutter Heads to your own specific problems. Write: Henry Disston Division, H. K. Porter Company, Inc., Philadelphia 35, Pa.

H. K. PORTER COMPANY, INC.

Henry DISSTON DIVISION

Sander Speeds Sheet Finishing

A new wide drum flexible sander known as Flex-Drum, capable of sanding up to 60" widths on a single pass, has been announced by Merit Products Company, Los Angeles. Adapting the "soft wheel" principle found in the Grind-O-Flex wheels now in wide use, the Flex-Drum revolves a continuous series of thousands of projecting abrasive "leaves" which sweep against and across the surface of the work.



Designed to speed up volume wood finishing processes, the Flex-Drum sander sands without planing. The flexible leaves of abrasive ride over warps and ripples, finishing high and low spots with uniformity. The wheel will not "load" on painted or plastic surfaces. This unit features continuous and/or reciprocating feed.

The manufacturer states that the drum alone may be supplied, or Merit Products will custom design the machine in accordance with the requirements. Prices and catalog information are available from Merit Products, Inc., 3691 Lewanee Ave., Los Angeles 16, California.

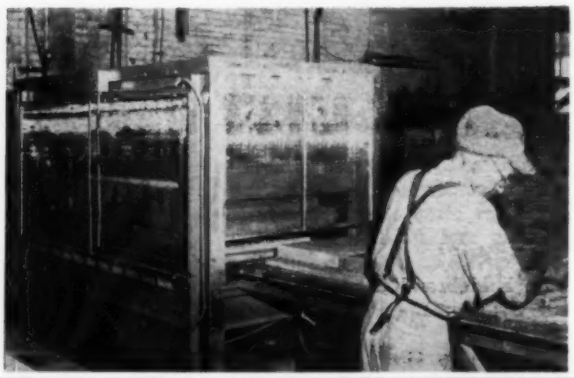
Use postpaid card. Circle No. 35

Hi-Frequency Shuttle Press

The Union Tool Co., Warsaw, Ind., is marketing a high frequency shuttle press. The machine is designed and built to perform the panel-to-frame glue curing operation with a working platen area 26" x 68". The upper platen, arranged for high frequency stray field heating operation, is adjustable up and down to compensate for varying thicknesses of the work load, providing a maximum daylight opening of 4".

Here is how the machine operates. Two manually operated shuttles tied end-to-end with a linkage assembly form the bottom platen surface and move back and forth through the press area, permitting the unloading and loading of one while the other is holding a load in the curing process. Tracks extending from each end of the press act as guides to permit movement of the shuttles in and out of the curing area, and provide an accessible loading and unloading work table.

An additional feature of the shuttle



Smaller parts may be loaded and cured on the shuttles in multiples.

25% to 40% faster cutting

Hundreds of industrial plants report actual increased sawing production of 25% to 40% and a higher quality work with use of Foley precision saw filing equipment. They get longer saw life, less breakage and lower maintenance costs. One firm reports an annual saving of $350.00.

Proof of these savings is in a helpful 56 page book we have for you. This free book is based on many years' use of Foley Saw Filers in thousands of plants. It contains pictures and detailed data on how these firms save money—how you can benefit. Request Manual No. 100; no obligation.

FOLEY MANUFACTURING CO.
3351 N. E. 5th St. • Minneapolis 18, Minn.

24" ENDLESS BED SANDER

This non-oscillating 24" drum produces a smooth sanding job, leaving no side streaks. Drum is 14" diameter, 24" long, felt-covered, with spring sandpaper lock holding paper snug and tight.

Variable feed 15 to 30' per minute; dust chute easily removed for changing sand paper or sanding curved work.

Drum and Idler rollers mounted on pregreased sealed ball bearings, requiring no attention. Capacity for stock up to 6" thick, lengths 16" and longer. With extra pressure bars will sand material short as 9".

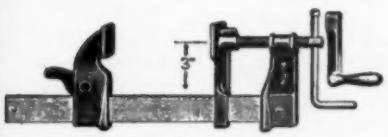
WOODWORKERS' TOOL WORKS
224 S. Jefferson St. Chicago 6, Illinois

USED BY THE WOODWORKING TRADE FOR OVER 40 YEARS

LONGER LIFE
Style No. 5—Bar 1⅛"x¼" Screw 11/16" dia., clamping surface 2" high and 1¾" wide. Safe clamping strain of 7,000 lbs., sliding vise-type or one piece crank handle.

QUICK ADJUSTING
Style No. 58—Bar 1¼" x 3/16", Clamping surface 1¾" Sq., Screw ½" dia., Wheel handle only, Positive Hartford locking mechanism. Bars—high carbon spring steel, castings—best refined malleable iron.

SELF-LOCKING & UN-LOCKING
Style No. 14.—Bar 1½"x¼" Screw ⅝" Dia., clamping surface 1¾" high and 1⅝" wide,—depth 3". Acme Threads with hardened thrust bearing at screw. Sliding Vise-Type or one piece crank handle.



The "HARTFORD" Tradition
PROMPT SHIPMENT
and
CUSTOMER SATISFACTION

The HARTFORD CLAMP Co.
Phone: Jackson 8-1708
466 PARK AVENUE
EAST HARTFORD 8, CONN.

Save with **MYERS**
WOOD WORKING **Factory Trucks**

$21.00 up
Prompt Delivery!

21" x 42" to 36" x 96"
1500 to 5000 Pounds Capacity

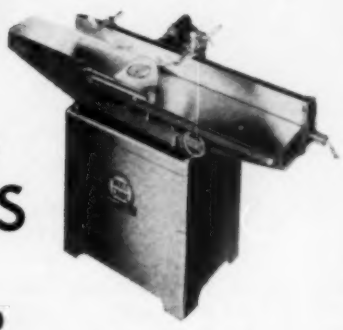
Rugged, easy-rolling, easy turning. Semi-steel or rubber tire wheels, strong dadoed joints, hardwood frame and deck. Low price, immediate delivery, no minimum. Representatives in key cities. Call, write or wire us today.

MYERS TRUCK AND CASTER CO.
CAnal 8-2536 – Nashville 7, Tenn.

LIMITED TIME!
SAVE UP TO 33-1/3%!

Quality Built. 12⅛" x 4½"
PLANERS
Regularly $413.50
Now as low as
$299.50

Corresponding reductions on all other models. Plane smoother. Plane thinner. Rugged 1-piece frame permits heavier cuts; faster feed.



Super-Long, All-Steel
6" X 60"
JOINTERS
Regularly $299.50
Now as low as
$199.50

Corresponding reductions on all other models. Oversize tables, head, fence, plus long-life welded steel construction. Assures perfect results without skill.

Free 52-page Power Tool Catalog.

BOICE-CRANE COMPANY
931 Central Avenue • Toledo 6, Ohio
America's Most Imitated Power Tools for 40 Years

BOICE CRANE POWER TOOLS

SEND us your saws and tools. We'll return them to you sharpened and reconditioned . . . to give you like-new utility with extra long wear.

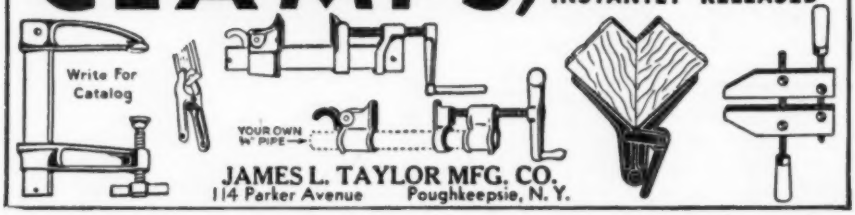
A trial order will show you the difference in quality sharpening and saw repair . . . by experts!

DEALER INQUIRIES INVITED!

We carry a complete line of CARBIDE TIP SAWS and TOOLS for all applications

DELUXE
SERVICE TOOL CORP.
1108 Grand Avenue, North Bergen, N. J.
Telephone: UNion 6-4630

CLAMPS, INSTANTLY ADJUSTED INSTANTLY RELEASED



JAMES L. TAYLOR MFG. CO.
114 Parker Avenue Poughkeepsie, N. Y.

table arrangement is that jig fixtures can be mounted to its surface and a variety of jobs performed by the machine. Smaller parts may be loaded and cured on the shuttles in multiples. Pressure to the platen area is supplied from the bottom with a pop-up type assembly, actuated by a series of air hoses, working in conjunction with the shuttles.

Using a 5 kw. generator, the machine has a capacity to cure 500 to 600 square inches of glue line per minute.

Angle Band Saw

The Enterprise Company of Columbiana, Ohio, has reinstated the angle band saw in its Crescent line of woodworking machinery. The Crescent 36" angle band saw, often called a shipbuilding saw, provides the advantage of handling work on a table which is always level, never inclined. It is particularly useful in working with large pieces of material. Stock 12" square by 10' long can be readily beveled, contoured, and twisted by one man, saving the additional labor usually required to hold the work. The Crescent angle band saw can also work small stock with great accuracy and savings in time.

The cutting angle may be gradually changed while the saw is in the cut, making the sawing of a twisted line a simple matter. Any angle from 0 to 45

FASTER HOLE PRODUCTION with Commander MULTI-DRILLS

DRILLS UP TO 22½" BOLT CIRCLE

• Drills up to 8 Holes at 1 Stroke • Fits Any Drill Press
• Adjustable to Any Hole Pattern
• Quickly Pays for Itself Many Times Over

● Commander MULTI-DRILLS are instantly and easily adjusted to handle any hole pattern within a 9" circle. Standard Extension Spindles will increase working area to 22½". Minimum center distances close as ½". Compact in design, ruggedly built, Commander MULTI-DRILLS are making BIG Savings in time and labor for wood-working plants everywhere. Special adaptations available.

Your nearby Commander Distributor has the MULTI-DRILL. Write for his name.
Write for complete catalog on Commander Production Tools

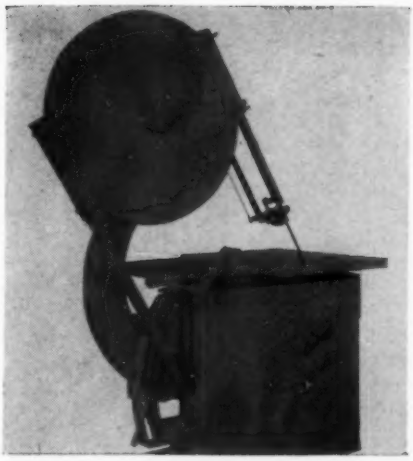
Commander MFG. CO. 4222 W. KINZIE STREET CHICAGO 24, ILLINOIS

modern styling • • •

SERVING THE INDUSTRY SINCE 1919

TAPERED AND STRAIGHT FERRULES, ROUND AND SQUARE --- FERRULES WITH BRASS AND PLASTIC SELF LEVELERS --- LEG BRACKETS AND PLATES ---MANUFACTURERS OF OVER 900 ITEMS.
WRITE FOR COMPLETE INFORMATION

WINZELER STAMPING COMPANY
30 Wabash Ave. Montpelier, Ohio



degrees to the left, and 5 degrees to the right may be obtained with the Crescent angle band saw. A graduated scale and pointer accurately indicate the degree of angle. Tilt is governed by a crank on the left-hand side of the table, and all other parts adjust automatically to the selected angle. Proper counterbalance insures crank-turning ease. Both lower and upper guides remain in exact alignment with the saw, and the lower guide maintains proper distance from the table's under side.

For further information about the Crescent 36" angle band saw, write this publication, or direct to the Enterprise Company, Columbiana, Ohio.

Use postpaid card. Circle No. 37

Specialists in

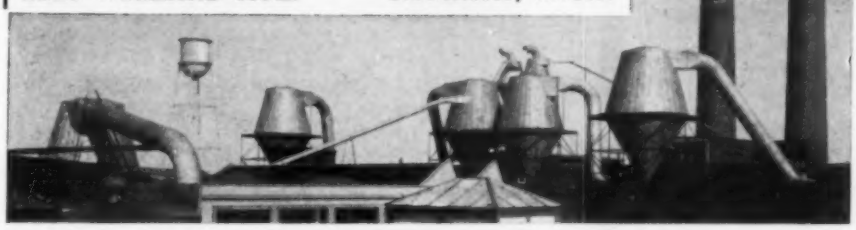
SHAVINGS & SAWDUST COLLECTING SYSTEMS

OLD SYSTEMS and FANS REBUILT

Leaders Since 1876

THE ALLINGTON & CURTIS MFG. CO.

1810 HOLLAND AVE. SAGINAW, MICH.



MORTISE CHAIN

for All Chain Mortisers

Quality-Production
Service guaranteed
Round and Flat Bottom
196 Size In Stock

Chain Mortisers

Light or Heavy Duty
Single or Multiple Head
for Sash, Cabinets
furniture and millwork

U.S. CUTTING CHAIN MFG. CO.

BROCKTON 64, MASS.

Swiss engineers and craftsmen have perfected for you a sensational new electric handsaw of unsurpassed performance and durability at a price you can now afford–

ONLY $99.50

Here, priced to fit your budget, is one of the finest power tools money can buy! Years of experience and research by Scintilla, Ltd. of Switzerland have culminated in the production of a precision tool to satisfy the most exacting master-craftsman.

The LESTO GEB/14 is "seven saws in one"—it's a rip, cross-cut, coping, keyhole, band, scroll and jig, leaving your work with a sandpaper-smooth finish! You'll be amazed at how fast it cuts wood up to 2" thick! It also cuts metal, formica, fibre-glass and abrasive materials. Ball and roller bearings make for smooth, quiet operation and prolong the life of the machine. Service and parts are available throughout the United States.

For further information and literature, see your dealer or write:

VICTOR J. KRIEG, INC.

Precision-made power tools of unsurpassed performance

611 BROADWAY, NEW YORK 12, N. Y.

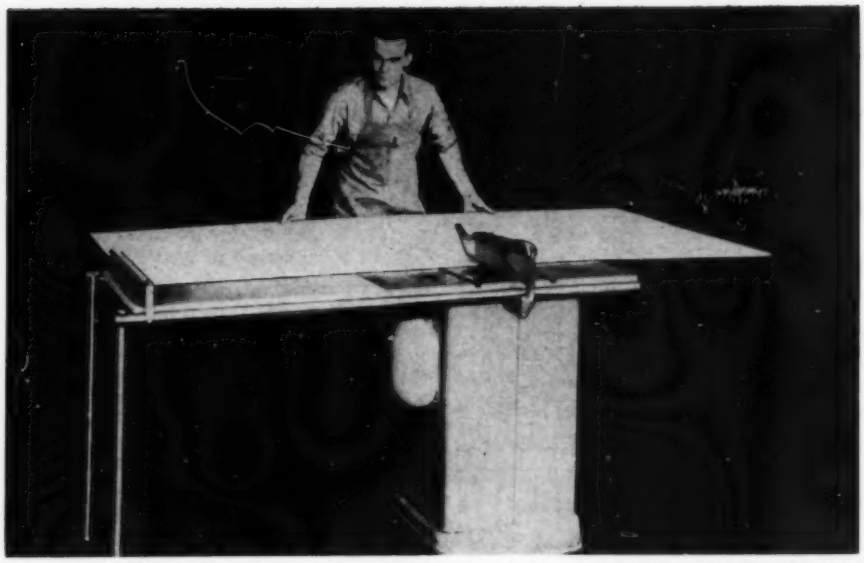
Delta Guide Rails

New double-length guide rails which double the capacity of the Delta 10" Unisaw have been introduced by Rockwell Manufacturing Company's Delta Power Tool Division. The new long guide rails enable the Unisaw to rip to the center of a 100" panel without any loss in accuracy.

With the new rails, the fence can be quickly and accurately positioned for large stock—particularly bulky panels. Material can be stacked right on the extension, and the regular guide bars can be used as extra supports. The new rails are calibrated for minute adjustment and drilled for quick, easy mounting on the Unisaw.

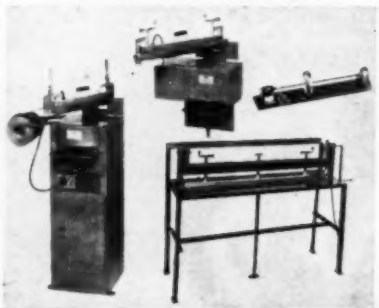
A brief bulletin describing the new rails and showing how to mount and use them may be obtained by writing Delta Power Tool Division, Rockwell Manufacturing Company, 477 North Lexington Avenue, Pittsburgh 8, Pa.

Use postpaid card. Circle No. 38



Delta has added double-length guide rails to the 10" Unisaw. This addition doubles the saw's capacity. Unisaw with rails can rip to the center of a 100" panel.

ECONAWAY
ABRASIVE BELT SPLICING EQUIPMENT



ABRASIVE BELT SPLICERS
Floor Model
Bench Model — Splices belts to 14" wide. Splice is set in seconds under pressure.

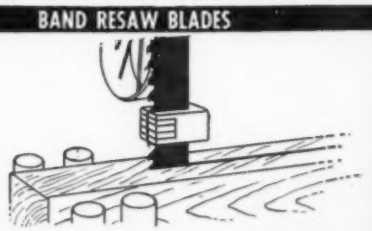
LARGE ELECTRIC PRESS ASSEMBLIES
For splicing belts from 14" to 50" wide.

MEASURING COUNTERS
Measures abrasives for belts quickly and in little space.
also
HIGH GRADE ABRASIVES
in rolls for all industries.
"YOU SAVE EVERY WAY WITH ECONAWAY".

Write for free literature.
U. S. and Foreign Pat's.
Manufactured and Distributed by:

ECONAWAY MANUFACTURING CO.
722 North Main St. Bellevue, Michigan

BAND RESAW BLADES



WHY

are so many users of resaws ordering Burton Steel Head Band Resaw Blades?
They're "Filer Finished!"

Burton Saw Co. WORCESTER 8, MASS., U.S.A.

• LOG BAND SAW BLADES • NARROW BAND SAW BLADES •

MARCOLOY CARBIDE BITS

DOVETAIL

Eliminate "down time" on your dovetailers with carbide bits. A perfect cut gives you a perfect match.

ROUTER

Improved design is 5-ways better. New low prices. Write for catalog and prices.

MARCOLOY CARBIDES
MARCOLOY, INC.
SPRINGDALE, CONN.

Individually Designed
CONVEYOR SYSTEMS

Corley Engineers can help you solve that tough handling problem. Let our more than 50 years' experience put profit back in the picture for you.

Write, wire or phone

CORLEY MANUFACTURING CO.
CHATTANOOGA, TENNESSEE

FINISHED DIMENSION STOCK OUR SPECIALTY
LINEAL - MOULDER - CUT - SANDED
COMPLETE MACHINED QUALITY WORK
BOWEN MILLWORK AND FURNITURE CO.
1845 PARR HIGHWAY ADRIAN 1, MICHIGAN

24" THICKNESS PLANER

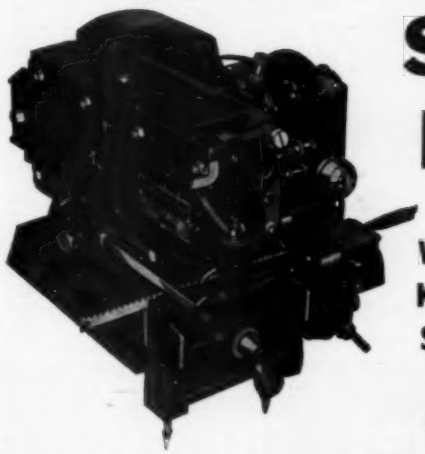
FOR
- **Safety**
- **Quality**
- **Production**

A modern planer engineered for heavy duty or cabinet work . . . features include single centralized table roll adjustment and electrical safety interlock. Patented features—electro-thickness indicator for accuracy and speed; pressurized dust proof cooling system; cutter head that's safe & stays locked; self-cleaning chip breaker.

WRITE FOR COMPLETE DETAILS TODAY

BALLANTINE INDUSTRIES
136 WHITE HORSE PIKE ABSECON, N. J.

Sharpens Band Saws Fast



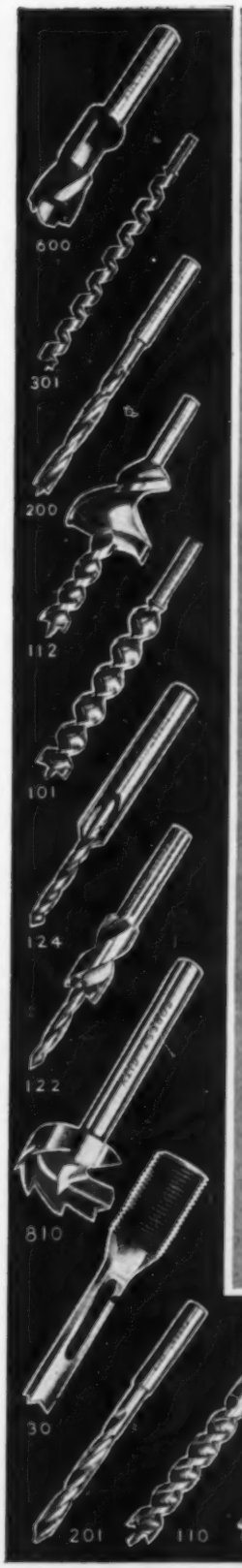
Wardwell's K 5 Joints, Sets, Files, in one Operation

A special feature is that saw is firmly locked by solid steel cam when being filed and set. WARDWELL'S exclusive joint-set-file operation sharpens 60 teeth a minute—with absolute uniformity. Results: cleaner and faster-cutting band saws—greater efficiency by 30 to 50%. In addition, K5 saves you the cost of a second operation.

WARDWELL
3806 Ridge Road
Cleveland 9, Ohio

Write for K 5 Bulletin

Maker of Largest Line of Saw and Tool Sharpening Machines



FOREST CITY TOOLS

WITH THEIR HAND FILED CUTTING EDGES JUST CAN'T HELP DOING A BETTER JOB FOR YOU!

■

PROVE THIS TO YOUR OWN SATISFACTION

■

SEND TODAY FOR FREE CATALOG . . . OR SEE YOUR DISTRIBUTOR

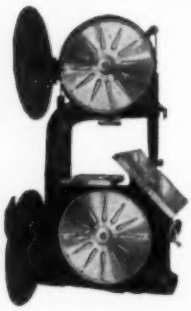
■

66 YEARS OF SERVICE TO THE WOODWORKING INDUSTRY

FOREST CITY BIT & TOOL COMPANY
HICKORY, N.C.

FOREST CITY

FAY & EGAN HIGH SPEED BAND SAWING



So finely balanced
So ruggedly constructed
So **easy to operate**

smoother cuts assured . . . less follow-up needed

PRODUCTION IS VASTLY INCREASED!

- CARTER DEMOUNTABLE WHEELS
- FULLY SAFETY GUARDED
- NO VIBRATION
- TROUBLE-FREE SERVICE

Metal Cutting Models Available

WRITE FOR FULL DETAILS

FAY & EGAN CO., 2023 EASTERN AVENUE, CINCINNATI 2, OHIO

TANNEWITZ AUTOMATIC GAUGE

for Swing Saws

SAVES $30 to $50 A MONTH IN LUMBER AND LABOR

30 Days Free Trial

ORDER NOW OR SEND FOR CIRCULAR

TANNEWITZ WORKS
GRAND RAPIDS
MICHIGAN
DEPT. 4

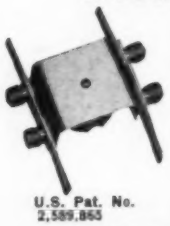
Profitable Business
FOR SALE

Principal in long established U. S. Manufacturer of well known line of patented sanding machinery for the woodworking industry is getting to that point of life where he wants to take things easier . . . and not let business interfere with his fishing. He is looking for someone or some company to buy his business including machinery, goodwill . . . in other words, "the works." Plant and real estate also available. This is a going business . . . operating profitably. And in our opinion is a once-in-a-lifetime opportunity. Our employees know of this advertisement and will stay on under new ownership . . . if buyer prefers to operate plant in present location. *All replies will be treated in strictest confidence.*

Box No. 469

Hitchcock's
Wood Working Digest
222 East Willow Ave., Wheaton, Ill.

JOINTER AND PLANER
KNIFE-SETTING
with MAGNETISM



U.S. Pat. No. 2,589,865

Eliminate the painstaking task of setting your knives by using MAGNA-SET. By employing the use of magnetism, the gage pictured in this ad is now saving the time and tempers of woodworkers in Industry, Home Work-shops and Vocational Schools throughout U.S.A.

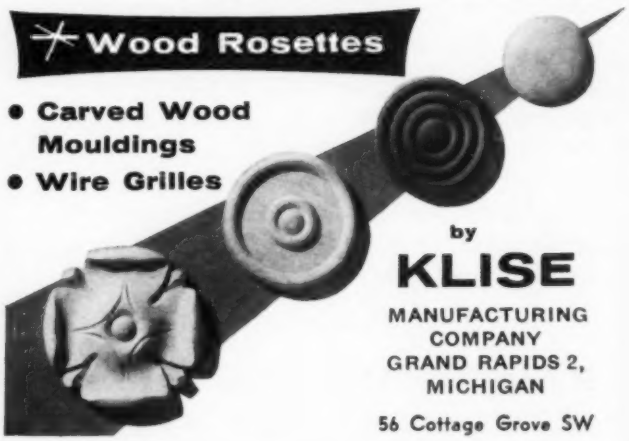
The accuracy assured by using this gage for Jointer and Planer knife-setting is unquestionable.—The necessity of tapping, prying and readjusting required by the usual trial and error method is entirely eliminated.

Ask your woodworking supply dealer or write:

MAGNA-SET CO. **Dept. WD**
632 NEW HAVEN AVE. **MILFORD, CONN.**

Wood Rosettes

- Carved Wood Mouldings
- Wire Grilles



by

KLISE

MANUFACTURING COMPANY
GRAND RAPIDS 2, MICHIGAN

56 Cottage Grove SW

Christmas lives in the joy and satisfaction of the giver . . .

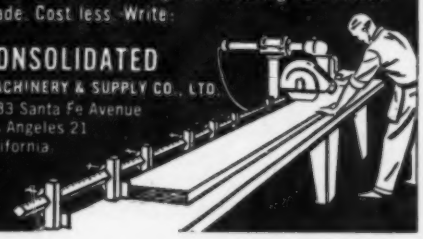
and in the delight and thankfulness of those who receive.

Buy and use Christmas Seals

Comet STOP GAUGES

For radial or swing saws. SAVE MONEY, time, labor and lumber. Stops are quickly put on or off without "threading" or removing bar. Finest made. Cost less. Write:

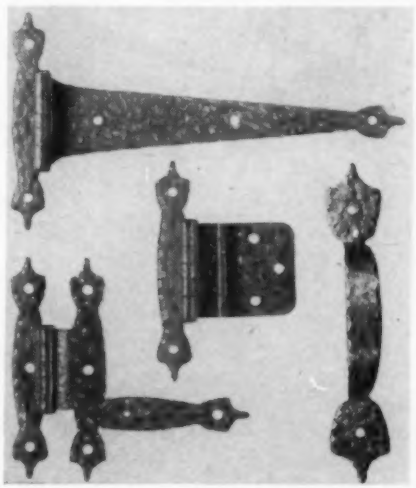
CONSOLIDATED
MACHINERY & SUPPLY CO., LTD.
2093 Santa Fe Avenue
Los Angeles 21
California



New Early American Hardware Line

A complete line of popular priced Early American cabinet hardware is announced by Aubrey Hardware Manufacturing Inc. The new hardware design features a unique colonial styling, available in three electro-plated, hammered antique finished: antique copper, black and Swedish iron, durable and rust resistant. Ideal for use on natural or painted cabinets.

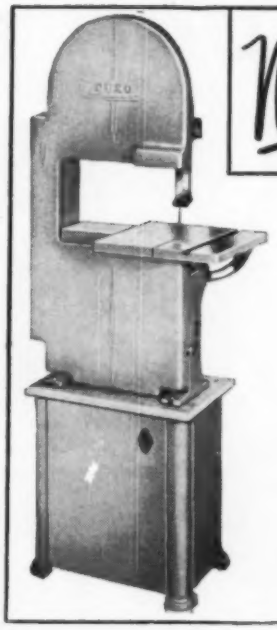
The line covers a full range of sizes in all types of hinges: offset, inset and



flush door hinges. Case hardened "Pyramid Head" screws are furnished with all Early American hardware.

For more information about the new Early American hardware line, write to Aubrey Hardware Manufacturing Inc., Union, Illinois.

Use postpaid card. Circle No. 39



New

HEAVY DUTY CABINET MODEL

BAND SAW

for wood and metalworking

Here is the ultimate in power tools. Built for efficiency, rugged use and safety. (All moving parts protected.) When you see, examine and put this 15" band saw through its paces—you'll quickly recognize that "there is a difference in quality, performance and all 'round utility." Duro engineers have incorporated every feature you want and need—they've built-in every important operating advancement and it is remarkably low priced to fit your operating budget.

Send for FREE catalog

giving full details on this 15" Band Saw & other Band Saws in the Duro Line. Also shows complete Duro Power Tool line.

DURO METAL PRODUCTS CO.

2685 N. Kildare Ave. Chicago 39, Ill.

our new face in

CLEVELAND

one more step in maintaining our policy of the finest in everything

- Central downtown location in CLEVELAND
- 5 Exciting Restaurants and Bars
- 1000 Rooms with Bath, Radio... T.V. available
- Hotel operated Garage attached
- Excellent facilities for Conventions and special Events

Room rates from $6

ROBERT P. JOYCE
General Manager

Hotel

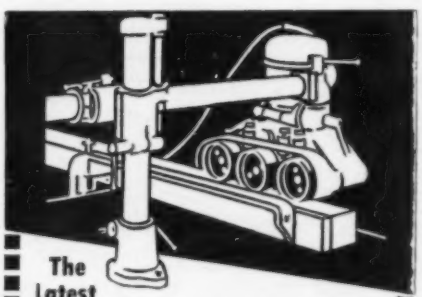
Hollenden

AN INTERNATIONAL HOTEL

Cleveland's Most Interesting Hotel

Superior Avenue & East Sixth Street

Phone: MAin 1-4700



The Latest Advance in Woodworking!

THE NEW HOLZ

AUTOMATIC FEEDER

With self-activated feed roller pressure.

- The only feed for circular saws, shapers, jointers and sanders.
- Adjustable to any working position and in any angle by means of a patented support bracket.
- Kick-back and accident proof.
- Small, light and handy, yet heavy duty.
- 8 feed speeds.

SOLD ON APPROVAL WITH COMPLETE MONEY-BACK GUARANTEE TO ALL RATED FIRMS

Send for folder and full information

HOLZ MACHINERY and TOOL CORP.

43 Mercer Street New York 13, N.Y.

Phone Walker 5-0469

For Blind or Extremely Long Mortises

FIELD

Since 1880

CHAIN MORTISE CUTTING EQUIPMENT

We stock over 150 sizes of both double and single-bearing Guide Bars, Mortise Chains and Sprockets.

Our quality equipment and interchangeable replacement parts insure maximum mortising production for your plant.

William H. Field Co.

INCORPORATED

332 DORCHESTER AVENUE

BOSTON 27, MASS.

Whatever you do, get the facts about

FIELD

Since 1880

WOOD THROUGH THE AGES

The London Guild

OF COOPERS MADE TUBS FOR THE FEW, WHO, IN MEDIAEVAL TIMES, WERE FASTIDIOUS ENOUGH TO BATHE!

CONSIDERED SMART AMONG THE PATRICIANS OF ANCIENT ROME WERE TABLES TOPPED WITH SECTIONS CUT FROM THE TRUNKS OF A CYPRESS THAT GREW ONLY IN THE ATLAS MOUNTAINS. THIS CYPRESS—CALLED THUIA WOOD—REVEALED, WHEN POLISHED, MARKINGS RESEMBLING THE "EYES" IN PEACOCK'S TAILS. CICERO ONCE PAID THE EQUIVALENT OF $20,000 FOR SUCH A TABLE!

ONE OF THE WORLD'S MOST GIFTED WOOD CARVERS WAS GRINDLING GIBBON, WHO, DURING THE REIGN OF ENGLAND'S CHARLES II, FREQUENTLY ASTOUNDED FRIENDS BY IMITATING, WITH WOOD, A LACE CRAVAT SO SKILLFULLY THAT IT APPEARED WOVEN INSTEAD OF CARVED!

if it has all these features it's a MOAK BAND SAW

LUBRICATED FOR LIFE

Both motor and wheel bearings are lubricated for life and sealed against dust and dirt. Gone forever is the need for periodic lubrication. Eliminated also is the risk of costly over and under-greasing.

OPERATOR DOES EVERYTHING FROM ONE POSITION

The Moak High Speed Band Saw is the only band saw on which a man can perform every operation without moving from his tracks. The resulting saving of time and energy means increased production.

MECHANICAL EQUALIZED TWO WHEEL BRAKES

When the foot pedal is depressed the motor is shut off and both brakes act simultaneously. If a saw blade breaks or runs off the wheel, the current shuts off and both brakes apply automatically.

TRACKING GAUGE SAVES TIME

Visible through a small window in the upper wheel guard is a pointer which indicates whether the saw blade is centered or not. If not it can be properly adjusted. This Moak feature saves time and also fully protects the operator while he is tracking the saw.

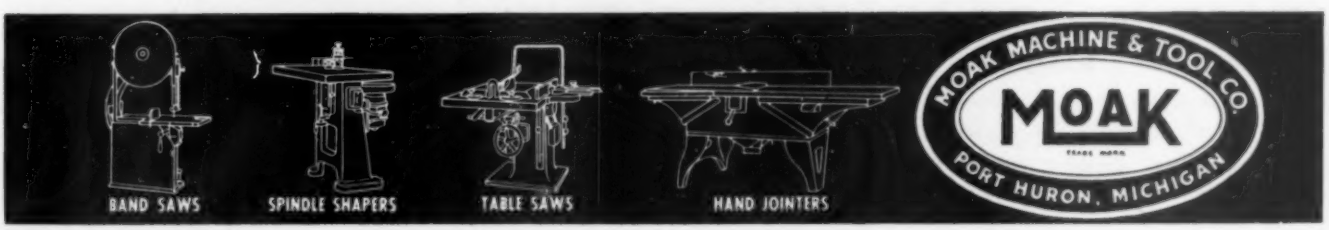
ENGINEERED TO BE VIBRATIONLESS

Not one part but all parts of the Moak High Speed Band Saw are constructed and balanced to operate with an absolute minimum of vibration. This is one reason Moak band saws continue to run over long periods of time without breakdowns.

TABLE HEIGHT TESTED FOR OPERATOR COMFORT

The table is 40" above the floor. Tests have shown this to be the ideal height for the average man, resulting in greater production than at heights one to three inches greater.

You don't buy a band saw every day. When you do, buy the best. For complete information on Moak 36" and 26" High Speed Band Saws, write for our illustrated booklets.



the market place *for*

- SERVICE
- EMPLOYMENT
- USED and REBUILT EQUIPMENT

RATES: $7.50 for name, address and a 5-line advertisement. Additional lines 75c. Display Advertising: 1" (minimum) $8.50; 2" $17.00; 3" $25.00. Additional inches, $8.00 per inch. Quarter pages and half pages available at regular space rates: Write for details. Closing date, 15th of month preceding publication.

FOR SALE
S. W. Harrington, Inc.
P. O. Box 230 — **Asheville, N.C.**

Air Compressor. Ingersoll-Rand No. ER 6x8, Complete
Air Compressors, various sizes
Bandsaws, Crescent 32" PB V-belt Drive and Motor
Band Saws, New Delta 20" bb, dmd
Band Saw, P. & E. No. 50—36", BB V-belt Drive
Borer, Superior 2 spindle horizontal MD
Borers: Root Single Spindle Direct Motor Drive
Borers: McKnight 88C, Chucking DMD
Borers: Greenlee 5 Spindle Horizontal M.D.
Borers: Greenlee No. 386—6 Ft. 8 spindle, DMD.
Carvers, Porter b.b. dmd.
Clamps: Lancaster No. 100C Case
Clamps, McKnight Chair
Clamps, Billstrom 29 sec., 6 clamps sec.
Clippers: Capitol 48"
Clipper, Coe 88" bed and motor
Clippers: Sheridan 65", MD
Dovetailers, Dodds 20 spindle
Dowel Driver and Gluers, Bell No. 8, MD.
Frequency Changers, 15-25-33-75, DMD.
Glue Jointer, Yates No. 213 & Jenkins 343A, bb, dmd.
Glue Spreaders: 12" Black Bros. dmd.
Glue Spreaders: Francis 42" Dbl. Roll, Rub. Cover MD.
Glue Spreaders, Francis, 60" Double Roll, Rubber Covered, M.D.
Jointers, New Moak 12" bb, dmd.
Jointers: 12"—8" and 16" bb, v-drive
Jointers, Porter 24" bb, dmd.
Mortisers: W&M No. 288, 6 spdl. horiz. dmd.
Mortiser, New Britain No. 7 bd. & motor
Moulders, Y-A C89—6" Electric BB, DMD
Moulders, Hermance 12" BB, BD & Motor
Moulders: Mattison No. 272, 4" Electric with Freq.
Moulders, Vonnegut 12", BB, DMD.
Planers: Whitney 30"—40" Single, BB, DMD.
Planers: Whitney No. 33—30" Dbl. BB, DMD.
Planers, F & E—30" double, pb, bd, & motor
Planers, Berlin 36" round head dmd.
Planers: Buss No. 4—30"-36" and 44" single, bb, dmd.
Facing Planers: 30" & 36" bb, dmd.
Planer-Matcher, Yates A1-15"x6" round heads, pb, bd.
Redrier, Mecritt 12 plate 36 x 72
Sanders, Indiana Scroll, DMD.
Sanders: Loeffler 24" Sgl. Drum, bb, v-drive
Sanders: Mattison No. 172 Edge belt, dmd.
Sander, Mattison No. 124 stroke
Sanders, Niagara brush, bb, dmd.
Sanders, Oakley, Drawer, MD.
Sanders: Sheboygan 49"—3 Drum End. Bed DMD.
Sander, 48" double disc, dmd.
Sanders, F&E 60" 3-drum roll feed, dmd.
Sanders, Oakley Edge Belt, M.D.
Sanders: Smith 43"—3 Drum, End. Bed DMD.
Sander, W&M No. 171 belt bb, m.d.
Sanders: Yates No 431, 43" End. Bed DMD.
Saws: American No. 10, TT PB BD.
Saws: Amer. No. 1, gang rip, bb, dmd.
Saw, Amer. Var. T.T. BB, DMD
Saws: Mattison No. 207, bb, dmd.
Saws: Eaglesfield Swing cutoff, bb, dmd.
Saws: Eaglesfield str. line rip bb, dmd.
Saws: New Delta-Crescent 12" tilting arbor dmd.
Saws: New Multiplex
Saws: Whitney, Var. T.A. BB, DMD.
Saws: Wilkins-C dbl. cut-off saw, 60x100", BB, DMD.
Shapers, Onsrud, Auto. BB, DMD.
Shapers: Porter No. 103C Sgl. bb, dmd.
Shapers: Whitney Auto. dbl.
Shapers: Whitney No. 389, double bb, dmd.
Shapers: Whitney, Dbl. Spdle. MD. BB.
Shapers: New Moak single spindle bb, dmd.
Shapers: Greenlee No. 180 double bb, dmd.
Shapers: Whitney double spindle bb, dmd.
Sticker, American No. 1, 1 side 4" pb, bed
Taping Machines, Dennis No. 2
Tenon Heads, single and double end
Tenoners: Amer. Single End, W/Copes, W/Motor
Tenoners, Hayes 6-Ft. double with copes, pb & motor
Motors, Electric, all sizes
Many other items, send your inquiries

FOR SALE
Woodward Machinery Company
309 E. Second St. — **Cincinnati 2, Ohio**

Band Resaw; American 48 in. $600
Chop saw; Bell MD $75
Cutoff saw; Lt. swing MD $60
Dovetailer; Advance 15 spdle., $400
Glue Spreader; 28 in. Francis dbl. power feed $125
Hog Machine; Williams no knife, $300
Jointer; cutoff and ripsaw, 3 machines, $150
12 in. Jointer, ripsaw, and cutoff saw all 3 for $175
Mortiser; Chain saw $300
Mortiser; Lt. hollow chisel, BB $100
Motors; Woods 1½ HP BB $30
Planer; Smith, 30 in. BB. rd. head, DMD, $750
Radial saw; Walker-Turner, 5 HP, $200
Ripsaw, Belsaw light gang, BB, $175
Saw; Beach Variety 5 HP Mtr. $135
Tenoner; F & E sgl. MD BB $300
Numerous other machines

FOR SALE
L. R. Kenner
3325 Trinity Road — **Louisville 6, Ky.**

Band Saw, 42" Tannewitz "GH", factory rebuilt.
Router, Onsrud W-240-D, two-speed 5 HP.
Rip Saw, Yates-American G-67 chain feed, motorized.
Sander, Ekstrom-Carlson No. 111 edge belt.
Sander, 48" Smith No. 404-C end, bed, motorized.
Variety Saw, Greenlee No. 495 tilting arbor, rebuilt A-1
Variety Saw, Oliver No. 260-D double tilting arbor, motors on arbors, A-1.

Industrial Wood Parts

Save production time, costs and space with Weyerhaeuser pre-cut wood parts! Parts processed to your requirements, cut-to-size, molded, edge-glued, end-worked, surfaced. No waste, lower freight, faster assembly.

Write for details.

WEYERHAEUSER INDUSTRIAL WOOD PARTS
400 W. Madison Ave. — Chicago, Ill.

IMMEDIATE DELIVERY

New Moak Single Spindle Ball Bearing Shaper—3 H.P. Motor 1⅛" Spindle.

AAA SAW & TOOL SERVICE & SUPPLY CO.
1401 W. Washington St. — Chicago 7, Ill.

For Sale
P. R. Hutchins
2025 Washington Ave., — Alton, Ill.

Small furniture business located near large city, ample supply of lumber. Machinery in excellent working order, modern, heated, brick building, 4 m sq. ft. floor space, close to R.R., good labor relations. Owner wishes to retire.

HEAVY EUROPEAN WOODWORKING MACHINES

Of excellent workmanship, available immediately from stock, delivered free American ports, duty and packing included. Prices are very attractive. Equipment for furniture manufacture, saw mills, plywood and veneer factories; all types of special woodworking machines. For particulars write:

TRANSATLANTIC MACHINERY CO.
155 King E., Toronto, Ont. Canada
Tel. EM 4-7984

MATTISON No. 262—6" Drop Table All Electric Fourside Moulder—fully reconditioned.
BELL No. 105A—Horizontal Three Spindle—nine bit—Automatic Motor Driven Borer.
GREENLEE No. 545 78" x 60" Double End Tenoner; with scoring saws. Priced so YOU can afford to own it.
GREENLEE No. 369D—48" Double Col Vert Gang Borer. BB DMD with 6 two-bit radial heads.
YATES-AMERICAN C-89—10" Elec. Moulder Hop. fd. etc. Modern mach at low attractive price.
NORTHFIELD Hyd. Chain Mortiser; almost new.
HOT PLATE PRESS. 12 Opening 72 x 31"—200 PSI. About 25% of comparable new equipment.
TANNEWITZ Model "GH"—36" Heavy Duty Bandsaw.
VONNEGUT modern model 12" Electric Moulder, with Hopper feed and complete set of head equipment.
ONSRUD WA50 Automatic Shaper with Center hold-downs and airclamps.

We have over 75 Ballbearing motor driven machines in stock and solicit your inquiry.

EDWARD B. MUELLER COMPANY
5320 Montgomery Rd. — Cincinnati 12, O.

Yates-Am. A-20 20"x8" Elect. P. & M.
Yates-Am. A-20 15"x8" Belt D. Profile
Yates-Am. A-62 15"x8" B.D. 8K Profile
Yates-Am. A-66 15"x6" Electric 8K
Newman No. 500 14"x6" Belt D. Profile, 6K
Newman No. 501 16"x8" Belt D. Profile, 6K
Newman No. 510 16"x8" Belt D. Profile, 6K
Newman No. 512 16"x8" Belt D. Profile, 8K
Vance No. 66 16"x6" Belt D. 4 Knife B.B.
Mattison No. 276 6" Elect. Moulder, Lag-Bed
Vonnegut 12" Electric Moulder, Late Style
Newman No. 412 Elec. Moulder, 12"w/Hop.
Yates-Am. C-89 10"x4" Electric Moulder
Ekstrom-Carlson No. 434 Router, 20,000 rpm
Yates-Am. No. 433 43" 3-Drum End. Bed B.B.
Smith No. 404 43" 3-Drum Endless Bed B.B.
Fay & Egan No. 399 30" 2-Drum End. Bd. BB
Yates-Am. V-41 54" B.B. Vert. Band Resaw
McDonough 54" B.B. Vert. Band Resaw
Mershon No. 54-C B.B. Vert. Band Resaw
Yates-Am. No. 283 44" Vert. Band Resaw
Diehl No. 75 B.B. Str. Line Ripsaw, 10 h.p.
Diehl No. 55 B.B. Str. Line Ripsaw, 15 h.p.
Amer. No. 21 Gang Ripsaw Roll Fd., 25 h.p.

R. K. HASKEW & CO., INC.
CHATTANOOGA 5, TENNESSEE
Phone AMherst 6-6214

Eaglesfield 72" Double End Tenoner 9 mtrs.
Natco 16 Spindle Borer—Motor Drive.
Onsrud No. 121 Auto Shaper, 8 Stations, 40" table Motor Drive
Yates G77 Straight line rip—Motor Drive.
Goodspeed 3" auto. lathe—motor driven
Fay & Egan No. 429 Continuous feed glue jointer—Motor driven
Mereen Johnson 38" rubber roll glue spreader—motor driven
Vonnegut self feed moulding sander—M.D.
Woods No. 131 8" converted ball bearing moulder
Yates American No. 505 9" Ball Bearing moulder
Hermance No. 60 6" ball bearing, coupled drive 4 speed drive motor
Single, Double Lock Corner Machine

MARKS WOODWORKING MACHINERY CO. INC.
25 Howard Street — New York 13, N. Y.
CAnal 6-1789

FOR SALE

McKnight No. 1E Automatic Saddle Seat Machine
Yates-American No. 0 Rip Saw
G. M. Diehl No. 75 Straight Line Rip Saw
American No. 2½ Single End Tenoner, D.M.D.
Curtis 8K2 Stroke Sander
Yates G-44 Straight Line Cut-Off Saw
Spartan & Crusader Models Auto Nailers
Bell No. 8 Gluer and Dowel Driver
Greenlee No. 368 Four Spindle Horizontal Borer
Bell No. 3 Dowel Pin Cutter and Pointer
Ekstrom, Carlson No. 111 Edge Belt Sander
Mattison No. 176 Edge Belt Sander
Mereen-Johnson No. 145 Horizontal Band Resaw
Vonnegut Model SEM Brush Back Sander Stand
Crescent 36" D.M.D. Band Saw, Delta Uni-Saw
J. A. Fay & Egan No. 505 Single End Tenoner
Bede Hot Laquer Circulator
Black Bros. No. 200 Sash and Frame Clamp
Delta 8" Floor Model Jointer
Air Operated Cold Press 4' x 10'
American No. 25 Straight Line Rip Saw
Handy No. 465 Frame Clamp
Challoner No. 180 Multiple Chain Saw & Hollow

W. W. THAYER COMPANY
7347 Overbrook Drive, St. Louis 21, Missouri
Phone: EVergreen 5-7483

Do You Need Kiln Dried Cabinet & Trim Woods?

Immediate shipment from our mill—
Walnut, Cherry, Teak, Prima Vera, Limba, Mahogany, Butternut, Birdseye Maple.
Thirty-five species in all thicknesses—write for list and description.

CHESTER B. STEM, INC.
439 Grant Line Road, New Albany, Ind.

FOR SALE

One Greenlee No. 545 Double End Tenoner 84" wide, 66" ahead of the hold-down. The machine is equipped with scoring saws, tenoning arbors, cut-off saws and copes and is in good running condition.

WHITE PARTITIONS, INC.
56 E. Glenwood Ave. Hyde Park 36, Mass.

Band, Rip and Resaw, F&E No. 146-42"
Band Saw 30" Fay & Egan B.B. D.M.D.
Band Saw, 20" Delta & Powermatic, New
Band Saws, Delta 14" w/sgl. ph. motor
Band Resaw, 54" Mershon & American
Belt Sander, double belt Curtis, M.D.
Carving Machine Porter Bench M.D.
Door Clamp, Greenlee
Grinder Auto Knife Rogers 32'
Jointer, Crescent 16" V-belt motor drive
Jointer 8" Delta No. 37-323 M.D.
Jointers 8" New Delta & Powermatic
Mortiser, hollow chisel Y-A No. K25, DMD
Mortiser Chain New Britain No. 2 and No. 3
Moulder, Yates No. C4A-8" w/motor
Moulder, XL, 6" x 2", nearly new, sgl-ph. 220 volt motor Extra Cutters
Nailing Mach. Morgan 48"—16 track o.b.
Nailing Mach. Morgan 66"—24 track o.b.
Nailing Machine Doig type 60C—16 track open back with clincher M.D.
Planer, Whitney 30x7" babbitt, belt drive
Planer, Powermatic 12" and 16", New
Planer Sgl. Crescent No. P-24-24 x 8" DMD
7½ HP with electric knife sharpener
Radial Saws Uni-Point and Skilsaw 5 HP 3 phase
Rip Saw, Chain Feed, Mattison No. 205
Rip Saw, Roll Feed, Dependable No. 112 and Hall & Brown No. 223, B.B., D.M.D.
Saw tables, tilt. and arbor Delta & Powermatic, New
Shaper, Crescent No. S-2, sgl. sp. MD, New
Shaper, Delta Cabinet Model, 1 HP Sgl. Ph. Motor with Cutters
Shook Splicer Morgan 3 head M.D.
Sticker, Jenkins No. 85, 3-side, B.B., 10 H.P. Motor Double Grooving & Boring Attachments, extra heads, chain feed
Swing Saw, H&A No. 55, 5 HP, 3-ph. motor
Tenoner Sgl. End Hayes and H & B
Tenoner, American No. 2½, D.M.D.
Tilting Arbor Saw, Atlas & Walker-Turner

McDONALD MACHINERY CO.
1535 N. Broadway St. Louis 6, Mo.
Telephone: CEntral 1-9360

NEW & USED REBUILT

Bandsaws, planers, tenoners, mortisers, sanders, self-feed rip saws, clamps. Send for our complete stock sheet.

AMERICAN MACHINERY EXCHANGE
2044 W. Lake St. Chicago, Ill.

POSITION WANTED

12 Years Experience Solid Wood Furniture as Factory Superintendent. Masters Degree in Forestry, Age 43, Experience Includes Overall Management, Production Control, Purchasing, Labor Relations, Cost Control, Desires Management or Sales Opportunity in Woodworking Industry.

Write Box 475 c/o
WOOD WORKING DIGEST
222 E. Willow Ave., Wheaton, Ill.

FOR SALE

3—No. 327 EKSTROM CARLSON ROUTERS just taken off production line. In top cond.

NORTHERN MOULDING CO.
3524 Martens Str. Franklin Park, Ill.

FOR SALE
FURNITURE FACTORY

Located in New England—established for over 80 years. Manufacturers of Adult & Juvenile Furniture. One of the oldest names in the industry.

Commerce Bank & Trust Company
Worcester, Massachusetts

Information Contact: Mr. William Roberts
Vice-President & Treasurer

FOR SALE

2 Drum 43" SHEBOYGAN
Endless-Bed Sander.
Motor Drive. Reconditioned.

SHEBOYGAN MACHINE COMPANY
Sheboygan, Wisconsin

USED AND REBUILT MACHINES
PRICED FOR QUICK SALE FROM STOCK

Blowers: Shavings 8" x 22"
Boring Machines: Andrews Vertical Multi-Spindle
Andrews Horizontal
Fay & Egan No. 312
Andrews Single Spindle
Jones-Superior No. 35 Radial Chair
Foot-Burt Vertical 4-spindle
Fay Single Spindle horizontal
Vertical, 2 HP, DMD
Box Squeezer: Lock Corner, manual
Carvers: Gallmeyer & Livingston, double end spindle
C. O. Porter, hi-speed spindle
Clamps: Handy, air-operated
Handy Mitre
Handy Glue Clamp—revolving (carrier)
Conveyor: Porter Model 800-D
Glue Jointers: Fay & Egan No. 429 ball brg.
Jenkins Mod. No. 3-CD ball brg.
Glue Spreader & Mixer: Black Brothers, glue spreader, bench type
Black Brothers, glue mixer
Grinders: Brown & Brockmyer—pedestal 8"
Aerial—foundry type
S. A. Woods No. 227
Hand Planers & Jointers: Fay & Egan No. 316—16" pl. brg.
Fay & Egan No. 506 20" ball brg.
Solmaltz 16" pl. brg.
Buss 24"
Crescent 8" ball brg.
Porter 24" Jointer
Lock Corner Cutters: Morgan Camera
Moulders & Stickers: Hermance No. 50—12"
Hermance E-1, 6" Four-Side
Fay & Egan No. 182—9" pl. brg.
Mortisers: New Britain No. 7 Chain
Greenlee No. 228 Hollow Chisel
Sidney "Famous" Figure 704 Hollow Chisel
American No. 20 Hollow Chisel
Wysong & Miles No. 284
Fay & Egan No. 510
Planers: (Single) P. B. Yates No 156 cabinet type
Whitney 36"
Planers (double): American No. 666—30" ball brg.
Planer & Matcher: Newman No. 97, 40 HP motor
Rod & Dowel Pointers: Bignell make, hand feed
Fay & Egan No 7, power feed
Routers: Ekstrom-Carlson No. 327 ball brg.
Ekstrom-Carlson No. 434 ball brg.
Sanders: Ekstrom-Carlson No. 18 pedestal type
Gallmeyer Livingston spindle sander
Porter-Cable Type A-3 Electric hand
Black & Decker 7" Electric hand
Loeffler hand-feed drum, ball brg.
Mattison Hand Block Belt
Wysong & Miles No. 176, ball brg.
Berlin "Invincible"—43" roll feed
Yates No. 431 43" three drum endless bed
Sundstrand No. 100 jitterbug type
Saws (Automatic Railway Cut-Off): Greenlee No. 456
Saws (Band): Fay & Egan 36" pl. brg.
H. B. Smith 36" pl. brg.
Crescent 26"
Sidney 36" ball brg.
Fay & Egan No. 155 30" ball brg.
Saws (Band Mill): Fay & Egan No. 361 ball brg.
Saws (Band Resaw): Berlin No. 283 44"
Fay & Egan No. 146 Comb. Rip & Resaw
Fay & Egan No. 4—43" pl. brg.
Saws (Chain Feed Rip): Diehl No. 75 ball brg.
Defiance Machine Works
Fay & Egan No. 386 pl. brg.
Saws (Combination or Variety): Fay & Egan No. 500, tilting table
Tannewitz Type XJ, tilt arbor
Smith Mod. No. 338-A ball brg.
American tilt table
Lindahl No. 1, non-tilt table
Darra-James, tilt arbor, ball brg.
Saws (Double Cut-Off) American No. 3
Saws (Edger Type): Belsaw ball brg.
Saws (Rip): American Saw Mill—hand-feed
Dependable No. 114, 30 HP motor
Saws (Swing Cut-Off): Pl. brg., 7" column
Yates No. 235—heavy duty timber
E. B. Holmes No. 102 Undercut, ball brg.
Chicago Machinery Exchange, pl. brg.
Hendley & Whittemore DMD, 5 HP motor
Saws (Radial): Wallace Type CT
Crescent No. 458 Universal
Saws (Straight Line Cut-Off): Fay & Egan No. 700
Irvington No. 20 Universal
Porter No. 43
Yates-American
Shapers: Sidney, single, ball brg.
Pryibil Serpentine Buck, pl. brg.
Whitney No. 165, single spindle
Fay & Egan No. 8, single spindle
Porter No. 200 ball brg.
Spray Booths: With fan and other equipment
Tenoners: Jenkins Mod. 96, ball brg., double end
Harris Millbury, ball brg., bench
Universal Woodworkers: Cordesman Rechtin, pl. brg.
Fay & Egan pl. brg., 8"
Window Frame Machine: Smith & Phillips combination
Miscellaneous: Knife Balancing Scales, Factory trucks

WILL PAY CASH FOR
Single Machine or Entire Plant. All makes, models, sizes
Write, wire or phone today!
FAY & EGAN CO. • Tele. PL 1-0730
2023 Eastern Ave. Cincinnati 2, O.
Factory Rebuilt Machines

FOR SALE

WA505 Onsrud Automatic Shaper, 10 H.P. B.D. (Inside & Outside Shaping)

WA50 Onsrud Automatic Shaper, 10 H.P. B.D.

W122 Onsrud Automatic Shaper, 7½ H.P. with Frequency Changer

W123 Onsrud Automatic Shaper, 7½ H.P. with Frequency Changer, 60" table

W125 Onsrud Automatic Shaper, 12½ H.P. with Frequency Changer, 72" table

Above machines fully equipped with center clamp, 8 station clamps, hoses, clamp holders, feed gears, knife collars, etc. (Nothing else to buy.)

I also build forms and manufacture small air clamps for ONSRUD & WHITNEY automatic shapers and hand shapers.

KARL GUSFRE
3425 Fullerton Ave. Chicago 47, Ill.

Motor Driven
FREQUENCY CHANGERS
IN
STOCK

Sizes: 10 to 60 KW
Outputs: 90-100-120 and 180 cycle
Reliably Rebuilt
1 YEAR GUARANTEE
Attractively Priced
SAVE MONEY when you BUY any ELECTRICAL EQUIPMENT
We actually have one of AMERICA'S LARGEST STOCKS
Send us your Inquiries.

L. J. LAND, INC.
Est. 1910 (45th Year)
Corner Lafayette & Grand Sts.
New York 13, N.Y.
CAnal 6-6976

WALKER B. HOUGH & ASSOCIATES

Industrial Engineers

200 EAST 66th STREET, NEW YORK 21, NEW YORK

- Production Standards
- Wage Incentive
- Plant Layouts
- Method Problems

SERVING THE WOODWORKING INDUSTRIES EXCLUSIVELY SINCE 1926

DIESEL ENGINE (1948)

300 HP KW Diesel Engine Generating Set, 250 KVA—600 V—60C—300 RPM.
4 Cylinder, vertical, direct connected, 2 cycle Diesel Engine 300 RPM.
Evaporative cooler with motors.
7½ KW-125V direct current, belt-dr. exciter.
Switchboard with flush instruments.
Capacitator Rack with 6 units, 575V-60C-3 phase and break switch.
Evaporative cooler with motors.

AUTOMATIC PLYCOR MACHINE

Plycor, horizontal continuous glue clamp—two section stroke feed bar, heating plates, automatic cut-off saw, 68" wide, with motors. Hopper, feed, edge glue roll spreader for resinous glue, with motor.

For information contact

L. B. RAMSDELL CO.
GARDNER, MASS.

IN NEW YORK

43rd St. just West of Broadway
1000 rooms with radio and MUZAK $4 from

HOTEL AIR CONDITIONED TELEVISION

TIMES SQUARE

45th Street East of Broadway
400 fine rooms $4 from

TELEVISION HOTEL AIR-CONDITIONED

KNICKERBOCKER

FOR SALE

All equipment for laminating consisting of two large mixers with motors, 74" black vegetable spreader, hydraulic lift, Van Atta 50 x 100 heavy duty press with Foxboro controls. Will operate for inspection.

CHERAW VENEER COMPANY, INC.
CHERAW, SOUTH CAROLINA

AUTOMATIC SHAPING

We have three Onsrud Automatic Shapers —with open time! May we quote on mass produced, low cost automatic shaper work? Advise if you will furnish stock—or whether we should supply same.

BRIDGE TABLES & NOVELTIES, INC.
LOWELL, MASS.

ELECTRIC MOULDER

1—6" Woods, 4 head moulder, No. 137-M, ball bearing, motor driven, lag feed, hopper feed.
1—frequency changer for above, 25 HP motor and 40 HP generator.

WEISBERG-BAER CO., INC.
4-05 - 26th Ave. Long Island City 2, N.Y.
AS 8-3600

SPUTNICK may be coated with Union lacquer. The wear and tear is just a breeze for Union Lacquer & Air Dry synthetics. Send for your Free sample, Lac-R-100. 25 yrs. Know How.

UNION CHEMICAL CORP.
410 Frelinghuysen Ave., Newark 5, N. J.

---

elworks at

$2,500 per
ntion, paid
ccommoda-

perience on
nt or Sub-

d experience

C 8497

IEN required.
undations and
suitable appli-
Senior experi-
s and allow-
d Insurance
Astmorn.
C 8509

ior, required
y of building
nent is avail-
en to holiday
Engineering,

charge of
ies. The
pension
d appli-

by three months ... from the U.K. will be paid. Write ... C 8493

tion is ...
The appli...
heavy Civ...
Agent.
Apply givi...
to:—

SENIOR R...
Must be exp...
structures. H...
cants. Moder...
enced men. ...
ance made un...
Scheme. Ap...
Beeson, Peas...

STRUCTUR...
for busy Lor...
schemes. C...
able to men...
arrangements...
8 Buckinghar...

TECHNICA...
building ma...
position of...
scheme and...
cations ou...
etc., which...
"Civil Eng...

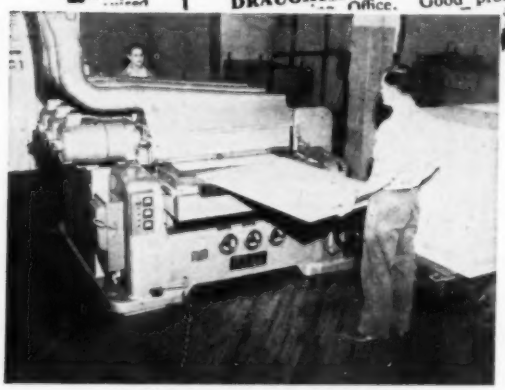
ENTERPRISING AGENT WANTED

Thomas White & Sons Ltd., woodworking machinery manufacturers of Paisley, Scotland, wish to appoint distributors in woodworking centres throughout the U.S. Companies with strategically placed branches preferred, but enquiries for localised representation welcomed.

For ourselves, we are the leading European manufacturers of high quality machines and specialise in sanders, moulders, planers and shapers.

This is not a cold-canvassing job: White machines have already been installed by perceptive American furniture makers. On the spot representation is sought to service existing customers, to handle new orders and follow up enquiries and to organise a Spares set-up.

DRAUGHTSMAN INTERMEDIATE required for expand-... Office. Good prospects for advanc...ent: ...es and Prestress... ...ations and...



Photograph reproduced by kind permission of Kindel Furniture Company, Grand Rapids, Michigan.

If you have the organisation and facilities for handling this range of modern plant, we invite you to write in complete confidence to the Export Manager.

Thomas White & Sons Ltd.

White

THOMAS WHITE & SONS LIMITED
Laighpark · Paisley · Scotland

SURFACER

Newman 600-18 Brand New
18" x 6" Cap.—3 HP Motor Drive $1000.00
Whitney No. 29—30" x 6" Belt Drive 600.00

HARRIS MACHINERY COMPANY
501 30th Avenue S.E., Mpls. 14, Minn.

Greenlee No. 369 48" 5 Sp. DMD Power Feed Borer
Porter 43J Hydraout Auto Cutoff Saw
Woods No. 137M 6" Elec. Moulder Hopper Feed
Yates C-75 12" 5 Head Elec. Moulder
Mattison No. 228 10" x 6" Elec. Moulder Lag Bed
Whitney No. 24 36" BB DMD Dbl. Surfacer
Whitney No. 67 One. Bit Mortiser DMD
Diehl No. 55 20 HP Ch. Fd. Ripsaw

BOSHCO, INC.
200 Boston Ave. MYstic 8-4010 Medford 55, Mass.

IMMEDIATE DELIVERY
DELTA
Radial saws, band saws, jointers, drill presses
SKILSAW
Sanders, Saws, Drills
ATLAS
Metal working and woodworking
PORTER-CABLE
Router, Sanders, Drills

AAA SAW & TOOL SERVICE & SUPPLY CO.
1401 W. Washington Chicago 7, Ill.

WANTED

Expanding New England furniture manufacturer needs an experienced foreman to take complete charge of new plywood veneering department. Good working knowledge of all phases of this work very essential. Salary commensurate with ability. State age, experience, and salary expected.

Write Box 479
C/O WOOD WORKING DIGEST
222 E. Willow Ave., Wheaton, Illinois

WANTED: FURNITURE MFGR.

to produce low-medium priced modern coffee and step end tables in cuttings of 5000 to 20,000 pieces.

Box No. 477—Woodworking Digest
222 E. Willow Ave. Wheaton, Illinois

BORING MACHINES

Moak Silver top—2 spindle Radial Borer
Root Single Vertical MD, Motor Feed
Towsley 2 Spindle, 2" to 16" with Foot Tr.
Yates Amer. U31 Vert. DMD, 5 HP, 1 HP Fd

COMPRESSORS

Curtis 10 HP 120 gal. tank
Westinghouse, 5 HP

DOVETAILERS

Dodds 10, 15, 20 Spindle

GLUE SPREADERS

Francis 72"—rubber rolls (2 extra rolls)
Union 42" rubber rollers air holddowns
Wallace 52" Roller Coater gear motor dr.

JOINTERS

American 12" Wedge Bed BB
American 16" Wedge Bed BB
Crescent 12" DMD
12" Colladay L. Powers, H. B. Smith, Crescent, Sidney
Jenkins glue DMD
Newman 12" DMD 3 legged
Newman No. 60 30" DMD 10 HP B.B.
Porter 12", BD
Northfield 12", DMD
Yates-American 16" DMD

LATHE

Oliver B.D. Ball Bearing 50" Centers

MORTISERS

Fay & Egan No. 510, Power Feed
Greenlee No. 228, Belt Drive
New Britain No. 2 and 7
Northfield Chisel Mortiser, Motor Driven
Sidney, Chain DMD Power Feed R & P Table with DMD chisel head.
Wallace Chisel Mortiser, Motor Driven

MOULDERS

Hermance 6" ball bearing BD
S A Woods 134M, 12", DMD., B.B.
Woods 6" all electric 132 m DMD

PLANERS

Monarch 20" CMD 5 HP with Starter, New
Northfield 24" Single, MD Motor Fd. No. 5
Triumph 4 side, 24" Planer & Matcher, B.B.
Whitney 24", CMD Sect. Feed, B.B.
Whitney No. 29, 40" CMD, BB
Yates-American B-8 24" DMD Sectional feed roll

ROUTERS

Onsrud 240

SANDERS

Mattison No. 138B—VBD B.B.
Beach Hand Block MD, 2 HP
Oakley H5S New Edge
Peerless 9", 14" and 20" Horiz. & Vertical
Vonnegut Vertical Drum Sander
Wysong & Miles, Oakley, Mattison Belt
Yates American Edge S-4

SAWS - CUT OFF

Beach cut-off saw 48" travel
Heston & Anderson No. 5. No. 25 & No. 55
Monarch 5 HP Radial Saw
Porter Hydra cut, 5 HP
DeWalt 1 to 5 HP DMD BB

BAND RE-SAWS

McDonough 54" VBD Ball Bearing
Mershon—54 C-54" Ball Bearing with mtr.
Covel-Hanchett—Band Re-Saw Grinder

SAWS - BANDSAWS

36" American, Tannewitz, Crescent, Oliver
27" Crescent Band Saw
32" Crescent Guarded BB VBD
Northfield BB & DMD 20" to 36"
Tannewitz 42", DMD

SAWS - SELF-FD. RIP SAWS

Diehl No. 55 Chain in table DMD DMF B.B.
Hermance No. 300—GS, Ball Bearing 40 HP Direct Motor Drive, gang rip 12" arbor
Mattison No. 207 Direct Motor Drive, Belted Feed, B.B.

SAWS - VARIETY

Northfield Tilt Arbor, DMD, 5 HP
Northfield Tilt Top DMD
Pryibil No. 10 Tilt Top, BB All Alum. Gages
50 other makes to choose from
Tidey single 36" carriage
Tannewitz Double Arbor MD—Sliding top

SHAPERS

American (S30) Sgle. Spdl., 5 HP & 3 HP Goodspeed double EBD
Onsrud No. 200 SS Shaper 2-speed BB
Porter, Single No. 203, 5 HP, Large Top
Whitney No. 34A Double
Yates-Amer., N44 Dble., 5 HP, Compl. encl.

TENONERS

Millbury Bench Model, 4 Hd.
Sidney single end
Powermatic 5 Hd 2 motors

NEW MACHINERY

Northfield Saws, Jointers, Bandsaws
De Walt Radial Saws & Parts, all Sizes
Walker Turner—Line
Powermatic—All Machines

WE PAY CASH FOR ENTIRE PLANTS OR INDIVIDUAL MACHINES

American Machinery & Motor Co., Inc.
22 HOWARD ST. NEW YORK 13, N. Y.

WOODWORKING FURNITURE MEN
$6,000 - $20,000

We are in touch with wood products manufacturers, nationwide, who are interested in finding competent men in Factory Management, Supervision, Engineering, Administration and Sales. If you are not employed to your best capacity or have a desire to change location, write confidentially to

JOHN COPE
Drake Personnel, Inc.
220 South State St., Chicago, Ill.
Phone: HArrison 7-8600

WANTED TO BUY

Small Wood Working Plant
Complete Data As To Sales.
Space, Equipment, Inventory Etc.

Write Box No. 465, c/o
WOOD WORKING DIGEST
222 E. WILLOW AVE., WHEATON, ILL.

Plant Manager or Superintendent 45 years of age or less, Wanted for Pallet and Box Operation. Man with good knowledge of production standards and incentive pay to supervise several plants. Please write giving details and salary expected.

Write Box 471, c/o WOOD WORKING DIGEST
222 E. Willow Ave. Wheaton, Illinois

WANTED

Head Cutter for old established veneer manufacturer in north central area with ability to supervise. Must be able to operate lathe, slicer, grind knives and to direct the steaming and vatting of fancy wood, both domestic and foreign.

Write Box 473
c/o WOOD WORKING DIGEST
222 E. Willow Avenue Wheaton, Ill.

Abrasive Sales Representatives & Distributors Wanted

Your proven experience & know-how selling Coated Abrasives and our Outstanding German "Hermes" Coated Abrasives line can be the right combination. Many wide territories throughout the country offer real opportunity for high profits. If you have what it takes, our proposition will be just what you are looking for.

Write Box No. 467
c/o WOOD WORKING DIGEST
222 E. Willow Ave. Wheaton, Illinois

Good machinery doesn't cost ...it pays!

BAND SAWS

CHICAGO 30" B.D.P.B.
CRESCENT 20" B.D.
DELTA 20" B.D.
OLIVER 30" D.D.

BORERS

GREENLEE No. 388C—12'—15 Sp.
ROOT No. D-250—2 Sp.
NEWTON No. 100—2 Sp.

CLAMPS

100—30" Retainer Clamps
HANDY Two Way Cabinet Hand Power
FRANCIS 8' x 2'—6 Sec. 18 Screws

CLAMP CARRIERS

BILLSTROM 6' wide—30 Sec. 4—30" Clamps per Sec.
BLACK 6' wide 40-sec. 6 30" clamps per section.

JOINTERS

NEWMAN 16" D.M.D.
NEWMAN 16" D.M.D. (New)
DELTA 6" & 8"

MORTISERS

WYSONG & MILES No. 284
NEW BRITAIN No. 5—Chain

MOULDERS

FAY & EGAN—8" BB BD.
EKSTROM-CARLSON No. 468—12" All Electric V.-B.D.
MATTISON No. 228, 10" D.D., H.F.—Late.

PLANERS

GREENLEE No. 110, 30", D.D.
WHITNEY No. 32—30" D.D.S.C.B. & S.F.R. & M.K.G.
NEWMAN No. 600—24" D.M.D. (2)
POWERMATIC 16"—B.D.
BUSS 30" D.M.D.—Sec. F.R. Sec. Chip Breaker
NORTHFIELD 24" D.M.D.—Pony

ROUTERS

ONSRUD No. W-240 (New)
ONSRUD No. W-112—D.D. with Frequency Converter

SANDERS

CURTISS D.B., 8'.
WYSONG & MILES No. 604 Oscillating Edge Belt (Like New)
YATES 42" Roll Feed 3 Drum Belt Drive
FAY & EGAN Combination 24" Disc and Spindle

SAWS—CUT-OFF

YATES-AMERICAN No. G44—Swing
MULTIPLEX B-60 5 H.P., 3 Ph.
SKILSAW 2 H.P., 1 Ph.
MULTIPLEX 3 H.P., 3 Ph.
BEACH Rolling Tap 98" x 48"

SAWS—RIP

DEPENDABLE No. 114 Gang, 15 H.P., D.D.
YATES-AMERICAN No. G-70—15 H.P. (New)
MATTISON No. 207—10 H.P.—D.M.D.
MATTISON No. 202, 15 H.P., D.M.D.

SAWS—VARIETY

FAY & EGAN Tilting Table Belt Drive
CRESCENT Tilting Table Belt Drive with Horizontal Boring Attachments
AMERICAN No. 1 Tilting Table Belt Drive
FAY & EGAN Double Arbor
NEWMAN No. K-16 (New)
DELTA 12" Tilting Arbor (New)
OLIVER No. 88D, 7½ HP DD—Late Type

SHAPERS

ONSRUD No. W-125 Automatic 12½ H.P. D.D. with Frequency Converter
YATES-AMERICAN No. N-4 Single Spindle V-belt Drive
EKSTROM-CARLSON No. 262 Double Spindle Belt Drive (Like New)

MISCELLANEOUS

DOIG 4 Track Nailer
PHELPS No. R-50" Fan
WARDWELL Saw Gummer
ONSRUD No. W-12 Lumber Stretcher
Hopper Feed for 12" MATTISON

NICHOLAS AND PARKS
MACHINERY COMPANY • 2800 Commerce • P.O. Box 5729 • Dallas, Texas • Riverside 1-3246

Manager, Production Executive

12 years varied experience large manufacturer. Full responsibility plant, purchasing, product development, production. Exceptional talent organization, personnel, methods. Know heavy equipment, industrial finishing. Consider employment or entering business with right man of equal ability in sales.

Box 4123, Austin 51, Texas

SANDER OPERATOR

Experienced operator wanted for belt sander, capable of making own forms for intricate shapes.

GEORGIA ART SUPPLY COMPANY
ATLANTA 3, GA.

DENSIWOOD SALES REPS WANTED

Build your sales volume with unique "DENSIWOOD," the densified wood backed by years of successful use. Won't scratch, dent or splinter. Natural wood beauty but 80% harder. Permits finishing in usual manner. A natural for many wood-working and furniture applications in your area. Write for data on available, protected sales territories.

LUNDSTROM LABORATORIES
139 Smith St. Herkimer, New York

POSITION WANTED

Plant Manager
Finance To Sales
Special Sales Contacts
Qualified For Complete Operation.

Write Box No. 463 c/o
WOOD WORKING DIGEST
222 E. WILLOW AVE., WHEATON, ILL.

REBUILT AND USED MACHINES

BAND SAWS
Monarch No. 72-D 20" ball-b., m-d
American, Crescent & Silver 36" m-d

BORERS
Root G250 foot-feed vertical single
Greenlee No. 356 foot feed vert. single
Root G300 heavy duty hyd. vertical single
Root CDH 5' vertical mult., straight line
Root CC 12-ft. x 12-in. vert. univ. multiple
Root CCXH 10'x22" double col. vertical univ. mult.
Greenlee 369D 8' vertical mult. m-d
Root "K" horizontal, single-spindle
Root K250 horizontal multiple-spindle
Root D210 heavy-duty hyd. horiz. single

CLAMPS
Handy No. 50 drawer and cabinet clamp
Lancaster No. 1000 air chair clamp

CARVERS
Minnesota 16 & 24-spindle multiple, m-d

JOINTERS
6, 8, 12, 16, 20, and 24" Hand Jointers

LATHES
Oliver No. 51-K motor head speed lathe
Mattison No. 57-B 42" auto. turning lathe

MORTISERS
Wysong & Miles No. 284 P.F. hollow-chisel
American No. 20, auto. P.F. hollow-chisel
New Britain No. 2 chain saw mortiser, m-d
Millbury pocket cutter & pulley mortisers

MOULDERS
Y-A No. 26-A 12" 4-side, motor driven
Yates No. 108, 10" 4-side, motor driven

PLANERS
Porter 24-in. motor-driven facing planer
American, Colladay, Yates 24" single
Monarch No. 41, 20-in. single, motor-driven

ROUTERS
Ekstrom-Carlson No. 434 high speed electric

SAWS
Bell No. 216 cut-off saw, motor-driven
American No. 1 ball-brg., tilting table, m-d
Bell No. 12B double miter and cut-off saw

SAWS—CHAIN FEED—SELF-FEED
American No. 25 chain-feed rip, motor-dr.
Mattison No. 207 chain-feed rip, motor-dr.
Hermance No. 36 chain-feed rip, dir. m-dr.
Hermance No. 300-GS gang self-feed rip

SANDERS
Smith No. 404-D 42-in., 3-dr. end-bed, m-d
Yates No. 431, 43-in., 3-dr. end-bed, m-d
Heath 24-in. and Beach 42-in. 2-drum roll-feed, motor-driven
Mattison No. 176 oscillating edge belt sander
Mattison No. 124 auto. stroke sander, m-d
Wysong & Miles No. 294 auto. stroke sander
Oakley Model E reversible dbl. belt sander
Root M207, 48-in. single disc sanders, m-d

SHAPERS
Porter No. 110 double-spindle, motor-driven
Whitney Nos. 134 and 139 double-spdl., m-d.

MISCELLANEOUS
Bell No. 24-B Sawing, Boring & Chucking mach.
Diamond 30½ in. veneer clipper, motor-dr.
Hawker No. 2 dowel rod machine, motor-dr.
Colladay and American sgl-end tenoners
Black sectional screw veneer presses

B. M. ROOT CO. York, Pa.

GRINDERS
AMERICAN 30", B.B.
JOINTERS
FAY & EGAN 316—16"
CRESCENT 16" B.B. D.M.D.
LATHES
YATES-AMERICAN No. 74-48" B.B. M.D.
MORTISERS
POWERMATIC No. 10 B.B. D.M.D.
BEACH 40A Hollow Chisel 3 h.p. D.M.D. B.B.
MOULDERS
AMERICAN 6" P.B. B.D.
YATES C4A P.B. B.D. 30 h.p. motor
PLANERS
NEWMAN 600—5 h.p. 24" D.M.D. B.B.
PARKS 12" D.M.D. B.B. 2 h.p.
SANDERS
YATES-AMERICAN S-33—49" ENDLESS BED, DMD, B.B.
COLUMBIA No. 10—49" 3 Dr. Roll Feed P.B.—DMD.
SAWS
MATTISON 207—CHAIN FEED—B.B.—D.M.D.
BELSAW RIPPER—B.B. M.D.
BEACH 142 BOX MAKERS CUT-OFF L.H.—B.B. D.M.D.
DIEHL No. 88 CUT-OFF B.B. D.M.D. WITH ROLLER TABLES
PORTER CUT-OFF B.B. D.M.D. WITH ROLLER CONVEYORS
WALKER-TURNER RADIAL 3 H.P. 3 PH.
DeWALT, 5 h.p., 1½ h.p., ½ h.p.
SHAPERS
SIDNEY 5 H.P. 3 PH. B.B. D.M.D.
TENONERS
POWERMATIC 2A—B.B.

HOLTSON MACHINERY COMPANY
46 DOUGLAS AVE.—COR. 1700 E. FIRST ST.
DAYTON 3, OHIO — Tel.: LI 1736

WE ARE
CLOSING
our WOODWORKING PLANT
WE OFFER FOR SALE

1—Palesch Machine Shop, Wausau, Wisconsin, 12" floor type pneumatic swing cut-off saw.
1—G.M. Diehl Mach. Works, Wabash, Ind., 14" floor type chain feed rip saw, 58"x66" table, cast iron base.
1—Curt G. Joa, Inc., Sheboygan Falls, Wisconsin, Model 90 Jenkins chain feed, 12 cutter head double end mortising, tenoning and cut-off machine.
1—Ekstrom Carlson & Co., Rockford, Illinois, 4-head roll feed sticker or molder.
1—Special chain feed double end portable chamfering machine, 36" wide capacity.
1—Solem Machine Co., 48" floor type belt feed 3-roll drum sander.
1—American Woodworking Machy. Company, Rochester, New York, Columbia No. 9 floor type 48" roll feed 3-drum sander.
1—2"-¼" dia. beam saw, 8'-0"x8'-0" plywood table.

Also numerous small tools and other equipment used in a woodworking plant.
If interested, ask for list and prices

PICK MANUFACTURING COMPANY
WEST BEND, WISCONSIN
Telephone: FEderal 4-2355

MACHINERY FOR SALE

BORERS
Andrew Vertical & Horizontal Borers
Greenlee No. 386 8' Vertical
Greenlee 356 Single Spindle Vertical

CARVERS
Porter No. 5M single-spindle, ball-bearing.

CLAMPS & CLAMP CARRIERS
Buss drawer clamps, hand-operated, various sizes.
Black Bros. revolving case clamps
Billstrom 7½-ft. 29-section clamp carrier, four 30-in. clamps per sec., air power-dr.
Lancaster No. 1010-B Air-Operated Chair Clamp
Palmer 8½-ft. 16-section wheel type clamp carrier, six 30-in. clamps per section.
Taylor 7½-ft. 30-section chain type clamp carrier, four 32-in. clamps per section.
Black Brothers, 22D 26" Double Roll

GLUING & VENEER EQUIPMENT
Diehl No. 89 and No. 890 Tapeless Veneer Splicers
New No. 300 Francis flat plate edge gluer.
Francis 42-in. double roll glue spreader, rubber roll.
Union 54 and 60-in. double roll glue spreaders, rubber roll.

GRINDERS
Diehl No. 62 and No. 68 Cutterhead Grinders

JOINTERS
Porter 30-in. Jointer with Jackson & Church 4-post feeder.
Jenkins 6 and 8-ft. saw type veneer jointers.
Diehl No. 69 veneer jointer.
Diehl No. 60 glue jointer.

LATHES
No. 57-D Mattison 42-in. automatic turning.

MORTISERS
Northfield hydraulic chain mortiser.
No. 67 Whitney oscillating.
No. 287 Wysong & Miles multiple-spindle horizontal, ball-brg., belt-dr.

MOTORS & FREQUENCY CHANGERS
30-KW Westinghouse frequency changer with 20-h.p. driving motor.
25-KW General Electric frequency changer with 20-h.p. Gen. Elec. driv. mtr.
75-KW Generator with General Electric 100-h.p. driving motor.

MOULDERS
Mattison No. 276, 6-in.
Hermance 6-in., belt-drive.
Vonnegut, 4" 6" & 8" Ball Bearing direct Motor Drive
Woods No. 137M 6-in. ball-bearing electric motors.

PLANERS
Park 20" single.
Whitney 30 and 36-in. single.
No. 32 Whitney 24-in. single cabinet.
No. 24 Whitney 30-in. double
No. 33 Whitney 32" and 50" double.
Oliver No. 170 Straitoplane.
Yates No. 177—30" Double.

PRESSES
Handy 73-in. bending press.
Handy screw press, 11-ft. x 30-in.
Francis 36 x 72-in. hydraulic cold press.

ROUTERS
Porter No. 612 two-speed, 10,000 and 20,000-r.p.m.
Onsrud W-240 2-speed sliding spindle.
Onsrud W-244 Router

SANDERS
Curtis Models 51 and 63, ball-bearing, direct motor-drive.
Indiana No. 12 Edge Sander.
No. 137 Mattison moulding.
No. 204 Wysong & Miles automatic stroke.
No. 404-A Smith 31" Three Drum Endless Bed, ball bearing, direct motor drive
No. 505-B Smith 43" Three Drum Endless Bed B.B. D.M.D.
Hamilton 16" Flat Bed
Porter Spindle Sander.

BAND SAWS
Tannewitz GH 36" ball bearing, motor drive

CUT-OFF SAWS
Porter Model 43-20S, both right-hand and left-hand, with tables.
Buss 8-ft. cabinet type double, ball-bearing, motor-drive.
Multiplex No. 60A radial arm.
Jenkins, No. 106 Chain Feed

MITER SAWS, Etc.
Crescent direct motor-driven, tilt-table.
Bell No. 12 double miter.
Whitney No. 77 Tilt arbor.

RIP SAWS
Diehl No. 75 chain-feed glue joint.
No. 207 Mattison chain-feed.
Diehl No. 55 chain-feed glue joint.
Mattison, 202 Chain Feed.

SHAPERS
No. 8 Buss double-spindle, ball-bearing, motor-drive.
Onsrud Type W-125 automatic.
Onsrud Type W-200 Two Speed
Whitney 139 DMD Double Spindle
Whitney No. 299 automatic single-spindle.
Porter No. 200 single spindle.

TENONERS
Tenko double-end, ball-bearing, direct motor-driven.
Greenlee Saw Type
Jenkins double end M. D.

MISCELLANEOUS MACHINES
Sparton auto-nailer.
McKnight Nos. 101 and 104 combination back bender and rock bndr.
McKnight No. 104, 6-opening hydraulic rocker bender.
Dodds 10, 12 and 15-spindle dovetailers.
New No. 26C Ekstrom-Carlson infeed attachments.
Ross straddle carrier.
Mitts & Merrill hog.
Williams No. 16-S no knife hog.
Air compressors, Curtis, Gardner and Ingersoll Rand 7 x 7.
Bell No. 50 dowel machine.
McKnight Corner Block Machine
Walters Rough Mill conveyer, complete.

MONICAL MACHINERY COMPANY
2020 BRISTOL AVE., N. W.

Telephone: Glendale 8-1433 **GRAND RAPIDS 4, MICHIGAN**

Fader's 40 YEARS' EXPERIENCE WITH WOODWORKING MACHINERY IS YOUR ASSURANCE OF DEPENDABILITY

ALL OFFERINGS SUBJECT TO PRIOR SALE

BAND SAWS
Fay & Egan No. 50, 36-in., direct motor drive, B.B.
Superior 36-in., motor driven
Tannewitz "RH" 42-in., ball-bearing, dir. m.d.

BORERS
Andrews 4 ft. Mult. Spdl. Vert. power feed.
Bell No. 24 Automatic Double End Bore, Saw & Chuck, direct mtr dr., ball-brg.
Bell No. 100 Auto. Front & Back Post, DMD
Fay & Egan No. 312, 5-spdl. Ver., Power feed
60" Greenlee No. 366—6 spdl. Vertical, DMD
Greenlee No. 368, Mult. Spindle Horiz., BB. DMD
Root GM Sgl. Spdl., Vert. Pwr. feed DMD, B.B.
Superior 3-Spdl. adjustable horiz., motor dr.
Valley City 2-spindle Adj. Horiz., Motor Dr.

CLAMPS—ASSEMBLY
Handy Revel. Case, 48" and 96" openings.
Lancaster Duncan Phyfe pedestal, air operated

CLAMP CARRIERS
Taylor 7½ ft. 40-sec., four 32-in. clamps per sect.
Billstrom 29-sec. 6 ft. 4-30-in. clamps per section

FACERS (JOINTER-FEEDERS)
Porter-Herzog 24-in. direct motor drive

JOINTERS
Diehl No. 60 cont. chain feed, direct motor dr., b.b.
Jenkins 3 CD cont. chain feed, direct motor dr., b.b.
Yates-Amer. 213 cont. chain feed, d m.d., b.b.

Phone STate 2-7634

Smith No. 92-A, 16-in., round hd., b.b. d.m.d.

MORTISERS
Wysong & Miles No. 284 vert. hollow chisel power feed, dir. motor drive, ballbearing
Greenlee No. 228 Vertical hollow chisel, motor dr.
New Britain No. 2 chain, motor driven

MOULDERS
Mattison No. 229, 10-in. All Elec., Ball-Bearing
Vonnegut 6 in. 4-side all electric, Ball-Bearing.
Yates C-3-A 4-in. 4-side ball brg., motor drive

PLANERS
Buss 30-in. No. 4 sgl. cabt., direct motor drive
Buss 30-in. No. 4L Sgl. Cabt., direct motor drive
Parks 12-in. Single, Ball-Bearings, mtr. drive
Porter No. 405, 24" Single, B.B., DMD

ROUTERS
Onsrud W 240 Hi-speed, BB, DMD
Porter No. 666 Hi-speed ball-brg. D.M.D.

SANDERS
Curtis 8V-R1, 6-ft. semi-auto., belt, d.m.d., b.b.
Solem SE7-3, 49-in. 3 dr. Endless Bed, DMD, B.B.
Yates No. 431, 31-in. 3-dr. endless bed, m.d.
Smith 43-in., 3-drum endless bed, dir. motor drive
Curtis 8V, 6 and 8 ft. Semi-Auto. Belt, d.m.d., b.b.
Curtis No. 51 hand block belt, d.m.d., b.b.
Mattison No. 138 hand block belt, motor drive
Mattison No. 124, 6 ft. auto. stroke, motor drive
Nash No. 10 6-spdl. Automatic Turning, D.M.D.
Production 20 in. Vertical Belt, d m.d., b.b.
Production 14 and 20 in. horiz. belt, d.m.d., b.b.
Vonnegut Brush Head Spdl., DMD, BB
Wysong & Miles No. 320 Vertical Drawer Sander
Pearson Edge Moulding, direct motor dr., b.b.
Wysong & Miles 309 disc and spdl., dir. motor drive
American 30-in. disc and drum, motor driven
American 24-in. disc and oscillating spindle
McKnight Vertical oscil. sgl. drum, motor drive
Superior No. 145 Db. end Cone, d.m.d., B.B.

SAWS—CUT-OFF
Bell 12B dbl-end mitre and cutoff, d.m.d., b.b.
Walker-Turner Radial, direct motor drive, b. brg.

SAWS—VARIETY
Atlas 10" Tilting Arbor, ballbearing, mtr. dr.
Fay & Egan No. 530, Tilt. Arbor, dmd, bb.
Tannewitz JS250 tilting arbor, d.m.d., ball-bearing
Tannewitz "E" Tilting table, direct motor drive b.b.
Tannewitz "XJ" Tilting Arbor, DMD, Ballbearing
American No. 30 rip and trim, tilt-table, motor-drive
Whitney No. 177 Tilt. Arbor, BB, DMD

SAWS—RIP
Beach No. 183 Spur feed, DMD, ballbearing
Diehl No. 75 Chain feed, BB, DMD
Mershon No. 336-E chain feed, direct motor dr. b.b.
Hermance No. 33 Chain feed, dir. m-dr. b.b.
Hermance No. 333 chain feed, direct motor dr., b.b.

SHAPERS
Meak No. 7 sgl. spdl. hi-speed, b.b., d.m.d.
Whitney No 293 auto., ball-bearing, dir. motor drive
Onsrud W-123 Automatic, multiple stations
Ekstrom-Carlson 162 sgl. spdl. hi-speed, b.b., d.m.d.
Onsrud WA50 Automatic, fully equipt. ballbrg.
Onsrud W125, Automatic, fully equipt.
Oliver single spdl., hi-speed, ball-bearing, dir. m.d.
Buss Sgl. spdl., hi-speed, ball-brg., dir. m.d.
Porter double spdl., hi-speed, b. brg., dir. mtr. dr.
Superior Serpentine (Buck) hi-speed, b. brg., m.d.

SPREADERS—GLUE
Bell No. 13 Automatic Dovetail gluer, elec. heat.
Francis 11 in. floor model, edge, MD

TENONERS
Greenlee 545 Double End, fully equipped, DMD
Colladay Single end, fully equipped, mtr.-dr.

VENEER MACHINERY
Diehl No. 890 Tapeless Veneer Splicer, DMD
Diehl No. 69 cont. feed, veneer jointer, d m.d., b.b.
Dennis veneer taping machine, motor driven

MISCELLANEOUS
Bell No. 3 Dowel Pin Cutter & Pointer, m.d.
Bell No. 8 Auto. Gluer & Dowel Driver, DMD
L. Power 30-in. circular resaw, motor driven, B.B.
Diehl No. 65 universal cutterhead grinder, D M.D.
Autonailer, Crusader Model, dir. motor dr., ball-brg.
Morgan 16-in. lock corner cutter, motor driven
Mattison No. 57 D, 42 in. Auto. Turn. Lathe, M.D.
Yates No. 74, 43-in. Auto Turn. Lathe, B.B., M. Dr.
Mattison hexagon lathe heads & knife holders

FADER WOODWORKING EQUIPMENT QUALITY

A. L. FADER & COMPANY
219 NORTH DESPLAINES STREET • CHICAGO 6, ILLINOIS

Sutton GUARANTEED

Best Buys in Woodworking Machinery

DOVETAILERS

Dodds 12 and 10 spindle

2—Dodds 12-Spdl. motor driven Dovetailers with Auto. Power Feed

Pico Auto. Dbl. End Dovetailer

GLUE SPREADERS

86″ Black No. 22DH Rubber Roll Resin Glue Spreader

GRINDERS

Covel-Hanchett Band Saw Grdr.

Practically New Stetson-Ross No. 372 Grinder

Newman 30″ Auto. Knife Grinder

Newman direct motor driven Side Head Grinder.

JOINTERS

12″ Crescent direct motor driven Hand Jointer

Diehl No. 660 Glue Jointer

Yates-American No. 213 Direct Motor Driven Glue Jointer

Yates-American 30″, No. 1 Direct Motor Drive Jointer with Four Post Herzog Feeder

24″ Yates-American No. 1 Jointer

MATCHERS

Newman 15″ No. 500 Matcher Ball Bearing

Yates-American A23 Elec. Hardwood Flooring Machine

MORTISERS

Crescent direct motor drive Vertical Mortiser

Wysong & Miles No. 286 Hinge Seat Mortiser

Wysong & Miles No. 284 direct motor drive ball bearing Mortiser

MOULDERS

Yates-American 10″ C-89 Electric Moulder

Yates-American 9″ No. 35 Electric Moulder

Yates-American 9″ C-55 Electric Moulder

Yates-American 6″ No. C-75 Electric Moulder

Newman 10″ No. 412 Electric Moulder

Practically New Stetson-Ross 8″ Type 48-K Fast Feed Electric Moulder, with Hopper Feed

Vonnegut 6″ Electric Moulder

Vonnegut 10″ Electric Moulder

SINGLE PLANERS

Buss 24″ No. 4L Direct Motor Driven Ball Bearing Single Planer

Buss 30″ Direct Motor Driven Ball Bearing Single Planer

Crescent 24″ P-24 Direct Motor Drive Ball Bearing Planer

2—Buss 36″ No. 66 Direct Motor Driven Ball Bearing Planers

2—Porter No. 700 Surfacemasters Direct Motor Drive Ball Bearing

All necessary conveyors from the cut-off saws through the above Planers and Porter Surfacemasters, all for delivery NOW

SANDERS

2—Lancaster Direct Motor Driven Drawer Sanders

Mattison No. 124 Auto. Stroke Sander

Solem 55″ Type SR-8 Double Deck 8-Drum Sander direct motor drive, ball bearing—practically new

1—Wysong & Miles No. 289 Edge Sanders

BAND SAWS

American 40″ No. 4 Band Resaw

CUT-OFF SAWS

Eaglesfield Direct Motor Driven Ball Bearing Swing Saw

2—Greenlee No. 542 Electric Double Cut-off Saws

20′ Tower Double End Trim Saw

RESAWS

Newman Circular Resaw Belt Drive

RIP SAWS

Dependable Gang Rip Saw Ball Bearing Motor Drive

SHAPERS

Onsrud No. 125 Automatic Shaper

TENONERS

Crescent Direct Motor Drive Sgl. End Tenoner

2—Greenlee No. 542 Electric Panel Sizer

Wilkins-Challoner No. 70 Electric Double End Tenoner

3—Jenkins No. 95 Electric Dbl. End Tenoners

VENEER MACHINERY

Dennis Veneer Taping Machine, Motor Driven

Francis 84x36″ Hydraulic Veneer

Plycor 10 Opening, 150x74 Hot Plate Press

MISCELLANEOUS

Spartan Auto Nailer

2—new Sweco Fine Separators, Model K-4D

Esterer Gang Saw Mill

Wardwell Saw Filer

Morgan 7-track Open Back Nailer with Clincher

Diehl No. 77 Waterfall Grooving Machine

Sutton WOODWORKING MACHINE CO.

PHONE BROADWAY 2-4186 **SEDGEFIELD INN** **GREENSBORO, N.C.**

Index to Advertisers in December Issue

TO OBTAIN INFORMATION FROM ANY OF THESE ADVERTISERS, FIND THE BOLDFACE KEY *PRECEDING* THE ADVERTISER'S NAME . . AND CIRCLE THAT NUMBER ON ACTION CARD A

201—AAA Saw & Tool Service & Supply Co. 122
202—AAA Saw & Tool Service & Supply Co. 124
203—Acme Steel Company 73
204—Adjustable Clamp Company 40
205—Allington & Curtis Mfg. Company 115
206—American Machinery Exchange 123
207—American Machinery & Motor Corp. 125
208—Amos-Thompson Corporation 97
209—Automation Equipment Company 81

210—Ballentine Industries 117
211—Beach Manufacturing Company 102
212—Behr-Manning Company 66
213—Bell Machine Company, The 10
—Bellerive Veneer & Plywood Ltd. 94
214—Binks Manufacturing Company 72
215—Birds Eye Veneer Company 98
216—Black Brothers Company, Inc., The 7
217—Boice-Crane Company 113
218—Boshco, Incorporated 124
219—Bowen Millwork & Furniture Co. 116
220—Bridge Tables & Novelties, Inc. 124
(Topper Products)
221—Burton Saw Company 116
222—Buss Machine Works ....3rd Cover

223—California Redwood Association 57
224—Chapman Chemical Company 6
225—Cheraw Veneer Company, Inc. 124
226—Click, Mrs. A. Graham 94
227—Coe Manufacturing Company 84
228—Commerce Bank & Trust Company 123
229—Commander Manufacturing Co. 114
230—Consolidated Machinery & Supply Ltd. 118
231—Cope, John 125
232—Corley Manufacturing Company 46
233—Corley Manufacturing Company 116

234—Deluxe Service Tool Corporation 113
235—DeWalt Incorporated 45
236—Disston, Henry 111
(H. K. Porter Co.)
237—Douglas Fir Plywood Association 90
238—Douglas Fir Plywood Association 91
239—Duo-Fast 109
(Fastener Corp.)
240—Duro-Metal Products Company 119

241—Econaway Manufacturing Company 116
242—Edmont Manufacturing Company 98
243—Ekstrom, Carlson & Company 54

244—Fader & Company, A. L. 127
245—Fastener Corporation 109
(Duo-Fast)
246—Fay & Egan Company, J. A. 22
247—Fay & Egan Company, J. A. 118
248—Fay & Egan Company, J. A. 123
249—Field Company, William H. 119
250—Finwood Industries, Inc. 95
251—Foley Manufacturing Company 112
252—Forest City Bit & Tool Company 117

253—Gamble Brothers 20
254—Gates Rubber Company 76
255—Georgia Art Supply Company 126
256—Gill Chemical Products, Inc. 108

257—Graycon Tools Incorporated 110
258—Greenlee Brothers & Company 8
259—Greenlee Brothers & Company 9
260—Greenlee Tool Company 106
261—Gusfre, Karl 123

262—Hanchett Manufacturing Company 108
263—Harrington Incorporated, S. W. 122
264—Harris Machinery Company 124
265—Hartford Clamp Company 113
266—Haskew & Company, Inc., R. K. 122
267—Heinemann Saw Corporation 52
268—Hermance Machine Company 106
269—Hildebrand Canada Ltd., Robert 109
270—Hill Brothers Veneer Company, Inc. 96
271—Hoe & Company Inc., R. 11
(Jones & Orth Cutter Head Div.)
272—Holtson Machinery Company 126
273—Holz Machinery & Tool Corp. 119
274—Hotel Hollenden 119
275—Hotel Knickerbocker 124
276—Hough & Associates, Walker B. 123
277—Hutchins, P. R. 122

278—Jacksonville Blow Pipe Company 99
279—Jamestown Veneer & Plywood Corp. 97
280—Jones & Orth Cutter Head Div. 11
(R. Hoe & Co., Inc.)

281—Kennametal Incorporated 100
282—Kenner, L. R. 122
283—Klise Manufacturing Company 118
284—Koch Sons Incorporated, George 64
285—Koppers Company, Inc. 104
286—Krieg Incorporated, Victor J. 115

287—Land Incorporated, L. J. 123
288—Lapeer Manufacturing Company 111
289—Lodge & Shipley Company 82
290—Lundstrom Laboratories 126

291—Magna-Set Corporation 118
292—Marcoloy, Incorporated 116
293—Marks Woodworking Mchy. Co., Inc. 122
294—Mattison Machine Works ....4th Cover
295—McDonald Machinery Company 123
296—Meiki Company, Ltd. 101
297—Mereen-Johnson Machine Company 26
298—Meyer & Sons, William W. 107
299—Michigan Abrasives Company 71
300—Mitts & Merrill 48
301—Moak Machine Company 121
302—Moline Paint Manufacturing Co. 74
303—Monical Machinery Company 127
304—Monsanto Chemical Company 23
305—Moore Dry Kiln Company 17
306—Mueller Company, Edward B. 122
307—Myers Truck & Caster Company 113

308—National Air Sander Incorporated 79
309—National Starch Products, Inc. 2
310—National Starch Products, Inc. 3
311—Newman Machine Company 14
312—Nicholas & Parks Mchy. Co. 125
313—Northern Moulding Company 123
314—Northfield Foundry & Machine Co. 62

315—Oliver Machinery Company ....
316—Onsrud Machine Works Incorpo
317—Pearson Sanding Machine Compa
318—Perkins Glue Company ....
319—Pfefer Company, Irving S. ....
320—Pick Manufacturing Company ....
321—Porter-Cable Machine Company
322—Porter Company, H. K. ....
(Henry Disston)

323—Ramsdell Company, L. B. ....
324—Reichhold Chemicals Incorporate
325—Richardson Company, J. S. ....
326—Root Company, B. M. ....

327—Saw & Knife Specialty Company
328—Sheboygan Machine Company ....
329—Skil Corporation ....
330—Smith Machine Company, H. B.
331—Solem Machine Company ....
332—Southington Hardware Mfg. Co.
333—Spotnails Incorporated ....
334—Standard Dry Kiln Company ....
335—Stanley Steel Strapping Div. ....
(Stanley Works)
336—Starrett Company, The L. S. ....
—Stem Incorporated, Chester B.
337—Supreme Woodworking Machine
338—Sutton Woodworking Machine Co
339—Swift & Company ....

340—Tannewitz Works ....
341—Tannewitz Works ....
342—Taylor Mfg. Company, James L.
343—Thayer Company, W. W. ....
344—Timesavers Incorporated ....
345—Transatlantic Machinery Compan

346—Union Chemical Corporation ....
347—United-Carr Fastener Corporatio
348—U. S. Cutting Chain Mfg. Compa

349—Veneer Machinery Company, The
350—Virginia Machine Tool Company

351—Walter & Company, Inc., B. ....
352—Walter & Company, Inc., B. ....
353—Wardwell Mfg. Company ....
354—Weisberg-Baer Company, Inc. ....
355—West Penn Power Company ....
356—Weyerhaeuser Industrial Wood P
357—White Partitions Incorporated ....
358—White & Sons Ltd., Thomas ....
359—Whitney & Son Company, Inc., B
360—Williams-Brownell Incorporated
361—Williams Patent Crusher & Pulver
362—Winzeler Stamping Company ....
363—Wisconsin Knife Works ....
364—Woods Machine Company, S. A.
365—Woods Machine Company, S. A.
366—Woodward Machinery Company ....
367—Woodworkers' Tool Works ....
368—Woodworkers' Tool Works ....
369—Woodworking Mchy. Mfrs' Associ

Handy Information Cards

THE three postpaid post cards at the right are to help you obtain information about products advertis in this issue. The top two cards offer you a way to get information about any product. The bottom card p vides key numbers for you to circle to get information about any new product item, free literature item advertisement published in this issue. New product and literature items are numbered where they appe For information about any advertisement, simply find the manufacturer's name in the Advertising Ind above, note the boldface number preceding the name and circle that number on the Action card. Bef sending the card, please check to see that you have included your name and address.

Issue

FACE KEY NUMBER
ON CARD AT RIGHT

ery Company 1
e Works Incorporated 36
ng Machine Company 75
Company 15
y, Irving S. 81
turing Company 126
Machine Company 49
y, H. K. 111
)

pany, L. B. 124
micals Incorporated 41
mpany, J. S. 40
B. M. 126

Specialty Company 109
chine Company 123
on 21
Company, H. B. 24
e Company 78
ardware Mfg. Co. 103
rporated .... 2nd Cover
Kiln Company 13
Strapping Div. 59
)
any, The L. S. 110
ated, Chester B. 122
working Machine Co. 60
orking Machine Co. 128
any 93

ks 34
ks 118
ompany, James L. 114
y, W. W. 122
corporated 80
Machinery Company 122

l Corporation 124
stener Corporation 19
Chain Mfg. Company 115

ery Company, The 99
ne Tool Company 61

pany, Inc., B. 44
pany, Inc., B. 53
Company 117
Company, Inc. 124
ver Company 18
Industrial Wood Parts 122
s Incorporated 122
Ltd., Thomas 124
Company, Inc., Baxter D. 4
ell Incorporated 56
t Crusher & Pulverizer Co. 55
ping Company 114
e Works 63
e Company, S. A. 50
Company, S. A. 51
hinery Company 122
Tool Works 109
Tool Works 112
chy. Mfrs' Association 25

ducts advertised
bottom card pro-
terature item or
re they appear.
dvertising Index
ion card. Before

You are invited to use these

POSTAGE-FREE ACTION CARDS

PRODUCT INFORMATION

A quick, free way to obtain information about the equipment and supplies you need to buy.

- Machines, flooring
- Machines, gluing
- Machines, grooving
- Machines, handle
- Machines, knot boring
- Machines, lock corner
- Machines, mitering
- Machines, mortising
- Machines, nailing
- Machines, package making
- Machines, panel and veneer sizing
- Machines, panel assembly
- Machines, pattern-making
- Machines, plow & bore
- Machines, profiling
- Machines, rubbing
- Machines, saddle seat
- Machines, saw setting
- Machines, scarfing
- Machines, scraping
- Machines, stapling
- Machines, steel strapping
- Machines, veneer cutting
- Machines, veneer taping
- Matcher Heads
- Matchers
- Motors, lumber
- Motors, moisture
- Mixers, glue
- Mixers, paint
- Molders
- Molder Blanks
- Molder Heads
- Moldings, wood
- Mortise Chains
- Mortisers
- Meters
- Nails
- Nuts, anchor
- Paint
- Pallets
- Patchers, panel
- Patchers, veneer
- Planers
- Plastic Sheets
- Plywood
- Plywood, flexible
- Plywood, imported
- Plywood, metal faced
- Plywood, molded
- Plywood, plastic faced
- Plywood Novelties
- Polishers
- Portable electric Tools
- Pots, glue
- Presses, bending
- Presses, chipboard
- Presses, edge banding
- Presses, hardboard
- Presses, laboratory
- Presses, lumber
- Presses, panel to frame
- Presses, plywood
- Presses, veneer
- Putty
- Resaws, band
- Resins
- Rivets, blind
- Routers
- Rubbing Compounds
- Safety Clothing
- Safety Equipment
- Sander Heads
- Sanders (Specify Kind)
- Sandpaper
- Saw Benches & Tables
- Saw Blades (Specify Kind)
- Sawing Machinery:
  - arbor
  - band
  - combination
  - crosscut
  - cutoff
  - dado
  - edger
  - electric portable
  - gang
  - jig & scroll
  - planer
  - radial
  - rip
  - swing
  - tilting arbor
  - variety
- Sawmills
- Screwdrivers, electric
- Screws
- Shaper Collars
- Shaper Heads
- Shaper Steel
- Shapers
- Sharpeners, chain
- Sharpeners, knife
- Sharpeners, saw
- Spreaders, glue
- Stackers, lumber
- Stains
- Staples
- Steel Strapping
- Stickers
- Strapping Tools
- Surfacers
- Table Equipment
- Tackers
- Tape, gummed
- Tenoners
- Trucks, dry kiln
- Trucks, factory
- Veneer
- Wood Preservatives

Data will come direct to you from responsible manufacturers.
Your request involves no obligation.

Name .... Position ....
Company ....
Street ....
City .... Zone .... State ....

PRODUCT INFORMATION

A quick, free way to obtain information about the equipment and supplies you need to buy.

- Abrasives
- Abrasive Renewing Compound
- Adhesives (Specify Kind)
- Air Conditioning Systems
- Arbors, Motor
- Arbors, Saw
- Bags, Paper
- Band Saw Accessories
- Band Saw Tires & Wheels
- Barkers
- Bits (Specify Kind)
- Blankets, paper
- Bleachers
- Blower & Fan Systems
- Belt Drivers
- Belts
- Booths, spray
- Borers (Specify Kind)
- Boring Tools
- Brazing Equipment
- Brushes
- Casters
- Clamp Carriers
- Clamping Fixtures
- Clamps (Specify Type)
- Clamps & Jigs
- Cleaners, booth
- Clippers, veneer
- Compressors, air
- Conveyors
- Cutoff tools
- Cutter Blanks
- Cutter Heads
- Cutters (Specify Kind)
- Cylinders, air
- Cylinders, hydraulic
- Dado Heads
- Dimension Stock
- Dowels
- Drawer Equipment
- Driers, furniture
- Driers, veneer
- Drill Attachments
- Drill Heads
- Drills, electric
- Drills, multiple spindle
- Dry Kilns
- Dry Kiln Control Devices
- Dust Control Equip.
- Edge Banding Equip.
- Edgers, lumber
- Enamel
- End Matchers
- Fasteners:
  - corrugated
  - joint
  - special
  - threaded, insert
- Fastener Driving Equip.
- Filing Room Equip.
- Finishes
- Flexible Shaft Equip.
- Furniture & Chair Parts
- Gauges, saw
- Generators
- Gluer, electronic
- Gluer, veneer tapeless edge
- Grinders
- Groovers
- Guards, machine
- Guide Lights
- Guides, saw
- Guns, glue
- Guns, spray
- Hardboard
- Hardware
- Heaters, glue
- Heaters, paint
- High Frequency Electronic Bonding Equip.
- Hogs
- Humidifying Equip.
- Jointers
- Jointers, veneer
- Knives (Specify Kind)
- Lacquer
- Lathes
- Lumber, hardwood
- Lumber, imported
- Lumber, softwood
- Machines, assembly
- Machines, banding
- Machines, barrel
- Machines, basket & hamper
- Machines, bed post
- Machines, bending
- Machines, boring
- Machines, box & crate
- Machines, box printing
- Machines, carving
- Machines, chair
- Machines, chucking
- Machines, clamping
- Machines, cleat
- Machines, coating
- Machines, cooperage
- Machines, corner block
- Machines, dado
- Machines, door & sash
- Machines, dovetailing
- Machines, dowel
- Machines, edge bending
- Machines, edge gluing

Data will come direct to you from responsible manufacturers.
Your request involves no obligation.

Name .... Position ....
Company ....
Street ....
City .... Zone .... State ....

December, 1957 — **For free information . . . use these postage-free Action Cards**

Free Literature and New Products circle key numbers

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100	101	102	103	104	105

Advertisements (See Ad Index at left for boldface key number to circle)

201	202	203	204	205	206	207	208	209	210	211	212	213	214	215
216	217	218	219	220	221	222	223	224	225	226	227	228	229	230
231	232	233	234	235	236	237	238	239	240	241	242	243	244	245
246	247	248	249	250	251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270	271	272	273	274	275
276	277	278	279	280	281	282	283	284	285	286	287	288	289	290
291	292	293	294	295	296	297	298	299	300	301	302	303	304	305
306	307	308	309	310	311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330	331	332	333	334	335
336	337	338	339	340	341	342	343	344	345	346	347	348	349	350
351	352	353	354	355	356	357	358	359	360	361	362	363	364	365
366	367	368	369	370	371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390	391	392	393	394	395
396	397	398	399	400	401	402	403	404	405	406	407	408	409	410
411	412	413	414	415	416	417	418	419	420	421	422	423	424	425
426	427	428	429	430	431	432	433	434	435	436	437	438	439	440

	Inside Front Cover				Inside Back Cover				Back Cover			
Inserts	1A	1B	1C	1D	2A	2B	2C	2D	3A	3B	3C	3D

Company ....
Name .... Position ....
Street ....
City .... Zone .... State ....

You are invited to use these

POSTAGE-FREE ACTION CARDS

FIRST CLASS
PERMIT NO. 272
WHEATON, ILLINOIS

BUSINESS REPLY CARD
NO POSTAGE NECESSARY IF MAILED IN THE U.S.A.

3c POSTAGE WILL BE PAID BY

Hitchcock's WOOD WORKING Digest

READERS' SERVICE DIVISION

WHEATON, ILLINOIS

FIRST CLASS
PERMIT NO. 272
WHEATON, ILLINOIS

BUSINESS REPLY CARD
NO POSTAGE NECESSARY IF MAILED IN THE U.S.A.

3c POSTAGE WILL BE PAID BY

Hitchcock's WOOD WORKING Digest

READERS' SERVICE DIVISION

WHEATON, ILLINOIS

FIRST CLASS
PERMIT NO. 272
WHEATON, ILLINOIS

BUSINESS REPLY CARD
NO POSTAGE NECESSARY IF MAILED IN THE U.S.A.

3c POSTAGE WILL BE PAID BY

Hitchcock's WOOD WORKING Digest

READERS' SERVICE DIVISION

WHEATON, ILLINOIS

INDEX

Abrasive Belt Splicer,
Abrasive Renewing C
Abrasives, 66, 71
Adhesives, animal, 15,
Adhesives, casein, 15
Adhesives, melamine,
Adhesives, phenolic, 2
Adhesives, resin, 15, 2
Adhesives, resorcinol,
Adhesives, rubber, 93
Adhesives, urea, 2, 23,
Adhesives, vegetable,
Air Compressors, 72

Bending Machines, 40
Beveling Tools, 36
Bits, machinery, 100, 1
Blowers, 107
Boring Tools, 40

Carbide Cutting Tools,
Carvings, 118
Chucking Machines, 4
Clamps, 40, 111, 113, 1
Conveyors, 64, 81, 116
Cutterheads, 63, 109, 1
Cutters, carbide, 11, 63

Dimension Stock, 20, 5
Dovetailer, 60
Drill Attachments, 114
Dry Kilns, 13, 17, 109
Dust Control Systems,

Engineers, Industrial,

Factory Trucks, 113
Fans, 107
Fastener Driving Eq
Cover, 109
Fasteners, 19, 103
Feeds, 119
Finishing Systems, 64,
Furniture Hardware, 1

HIT

EASTERN D

Dan E. Rear
c/o Hitchcock
55 West 42nd
New York 36
Telephone: L
Home Addre
South Glasto
Home Teleph

NEW ENGLA

John Pickeri
c/o Hitchcock
Box No. 29, A
Telephone: A

NEW YORK,
AREA, EA
CENTRAL
MD., DELA

H. George Bu
c/o Hitchcock
55 West 42nd
New York 36,
Telephone: L

HITCHCOC

DEX TO PRODUCTS ADVERTISED IN THIS ISSUE

A

ive Belt Splicer, 116
ive Renewing Compounds, 74
ives, 66, 71
ives, animal, 15, 23, 93
ives, casein, 15
ives, melamine, 23
ives, phenolic, 2, 23, 41
ives, resin, 15, 23, 41, 93
ives, resorcinol, 2, 104
ives, rubber, 93
ives, urea, 2, 23, 41
ives, vegetable, 15
mpressors, 72

B

ng Machines, 40
ng Tools, 36
achinery, 100, 106, 116, 117
rs, 107
Tools, 40

C

e Cutting Tools, 11, 52, 100, 106, 113, 116
gs, 118
ing Machines, 40
s, 40, 111, 113, 114
yors, 64, 81, 116
heads, 63, 109, 110, 111
s, carbide, 11, 63, 100

D

sion Stock, 20, 56, 116
iler, 60
Attachments, 114
ilns, 13, 17, 109
Control Systems, 107, 115

E

ers, Industrial, 123

F

y Trucks, 113
107
er Driving Equipment, Inside Front
r, 109
ers, 19, 103
119
ing Systems, 64, 81
ure Hardware, 114

G

Gloves, 98
Glue Room Equipment, 7, 10, 15
Glue Spreaders, 7
Grinders, knife, 84

H

High Frequency Bonding Equipment, 10
Hogs, 48, 55, 99

J

Jointers, 26, 62, 113, 121

K

Knife Setting Machine, 118
Knives, 61, 109
Knives, carbide, 11, 100

L

Lathes, back knife, 4
Lumber, 97
Lumber Lifts, 13
Lumber Stackers, 13

M

Matchers, 14, 22, 50-51
Moisture Meters, 13
Molders, 22, Outside Back Cover
Mortise Chains, 115, 119
Mortisers, 4

P

Painting Systems, 64, 81
Particle Board, 2
Planers, 4, 14, 22, 50-51, 113, 117, Inside Back Cover
Planes, 21, 49
Plastic Wood, 108
Plywood, 90-91, 94, 95, 97
Portable Electric Tools, 21, 49
Presses, laminating, 82
Presses, panel-to-frame, 82
Presses, particle board, 82
Presses, plywood, 82, 101

R

Redwood, 57
Routers, 36, 49, 54

S

Sanders, contour, 75
Sanders, drum, 24, 78
Sanders, edge, 75
Sanders, endless bed, 24, 76, 112
Sanders, portable, 21, 79
Sanders, scroll, 75
Sanders, wide belt, 80
Saw Blades, band, 110, 116
Saw Blades, carbide, 11, 52, 113
Saw Blades, circular, 113
Saw Gauges, 118
Sawmill Equipment, 46
Saw Sharpening & Setting Machines, 108, 112, 117
Saws, band, 34, 118, 119, 121
Saws, cutoff, 102
Saws, gang, 26, 46
Saws portable electric, 115
Saws, rip, 26, 106
Saws, tilting arbor, 107
Saws, variety, 45
Screws, 103
Screwdrivers, 21
Shapers, 1, 4, 102, 121
Spray Painting Equipment, 72
Stackers, 13
Steel Strapping, 59, 73
Strapping Tools, 73
Surfacers, 4

T

Table Equipment, 44, 53
Table Slides, 44, 53
Tackers, Inside Front Cover
Tenoners, 8-9, 26

V

V-belts, 76
Veneer, 96, 97, 98
Veneer Clippers, 84
Veneer Dryers, 84
Veneer Jointer, 99
Veneer Lathes, 84
Veneer Tables, 94
Veneer Taper, 99

W

Wood Parts, 118
Wood Preservative, 6
Wood Working Machinery, all kinds, 25

District Managers
HITCHCOCK'S WOOD WORKING DIGEST

EASTERN DIVISION

Dan E. Reardon, V. P. in charge
c/o Hitchcock Publishing Co.
55 West 42nd Street
New York 36, N. Y.
Telephone: LAckawanna 4-4528
Home Address: Box 1,
South Glastonbury, Conn.
Home Telephone: MEdford 3-7083

NEW ENGLAND
John Pickering Jr.
c/o Hitchcock Publishing Co.,
Box No. 29, Andover, Mass.
Telephone: Andover, Mass. 499

NEW YORK, METROPOLITAN AREA, EASTERN PENNA., CENTRAL N. Y. STATE, N. J. MD., DELA., D. of C.
H. George Burnley
c/o Hitchcock Publishing Co.
55 West 42nd Street
New York 36, N. Y.
Telephone: Lackawanna 4-4528

CENTRAL DIVISION

SOUTHERN OHIO, INDIANA, KENTUCKY
Henry J. Smith, V.P. in charge
c/o Hitchcock Publishing Co.
222 East Willow Avenue
Wheaton, Illinois
Telephone: WHeaton 8-3400

MICHIGAN, NORTHERN INDIANA, WESTERN OHIO
Douglas Horst
18055 James Couzens Highway
Detroit 35, Michigan
Telephone: Diamond 1-9525

ILLINOIS, WISCONSIN, IOWA, MINNESOTA, MISSOURI, SOUTH DAKOTA
Robert Prymuski
c/o Hitchcock Publishing Co.
222 East Willow Avenue
Wheaton, Illinois
Telephone WHeaton 8-3400

WESTERN NEW YORK STATE, WESTERN PENNA., EASTERN OHIO
Ralph E. Helfrick
1507 Edgefield Road
Cleveland 24, Ohio
Telephone: HIllcrest 2-0188

WESTERN DIVISION

CALIFORNIA, ARIZONA
Keith H. Evans
3723 Wilshire Boulevard
Los Angeles 5, California
Telephone: DUnkirk 8-2981
and
593 Market St. (Room 816)
San Francisco 5, California
Telephone: YUkon 2-4380

OREGON, WASHINGTON
Lloyd Thorpe
212 General Insurance Building
Seattle 5, Washington
Phone: Evergreen 4242

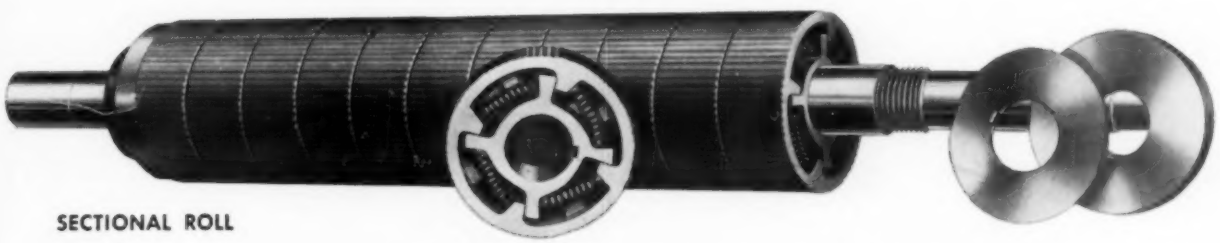
HITCHCOCK PUBLISHING CO. • Phone WH 8-3400 • Wheaton, Ill.

For years and years of Extra Service BUSS CABINET SURFACERS

NOW *ARE FURNISHED WITH* HARD CHROME-PLATED SECTIONAL ROLLS AND SECTIONAL CHIPBREAKERS

SECTIONAL CHIPBREAKER

. . . AS WELL AS CHROME-PLATED PRESSURE BARS, CENTER TABLES AND LOWER CYLINDER TABLES.



SECTIONAL ROLL

Among the dozens of features that make BUSS by far the best buy in cabinet surfacers is the many extra years of trouble-free service built into them. Typical of this is the hard chrome plating of sectional rolls and sectional chipbreakers (now standard) in addition to chrome plated center tables, pressure bars and lower cylinder tables. Now, all of the working contact surfaces that take the brunt of wear have a protective plating which, next to diamonds, is the hardest thing in the world. That means many, many years of extra service, extra returns on your investment. And when it comes to production there's nothing surpasses a BUSS. Don't by any means buy a planer without first getting the complete facts on BUSS. Write for bulletins or consult us on your requirements.

6 MODELS
40 SIZES

THERE'S A BUSS PLANER TO EXACTLY SUIT YOUR NEEDS

No. 4-L Single Surface, medium sized planer for first cutting and finishing work.

No. 44 Single Surface, 4 roll planer for first cutting and finishing work. **No. 66** — 6 roll.

No. 88 Double Surface, 8 roll planer for first cutting and finishing work.

No. 55 Heavy duty Double Surfacer for planing rough lumber.

MICRO-SURFACER for planing hardwood and other very thin materials.

BUSS
SINCE 1862
MACHINE WORKS

PLANER SPECIALISTS EXCLUSIVELY

234 EIGHTH STREET • HOLLAND, MICHIGAN

"Micrometer-perfect" door parts produced 4-at-a-pass by Mattison Moulders

AT ROLSCREEN COMPANY

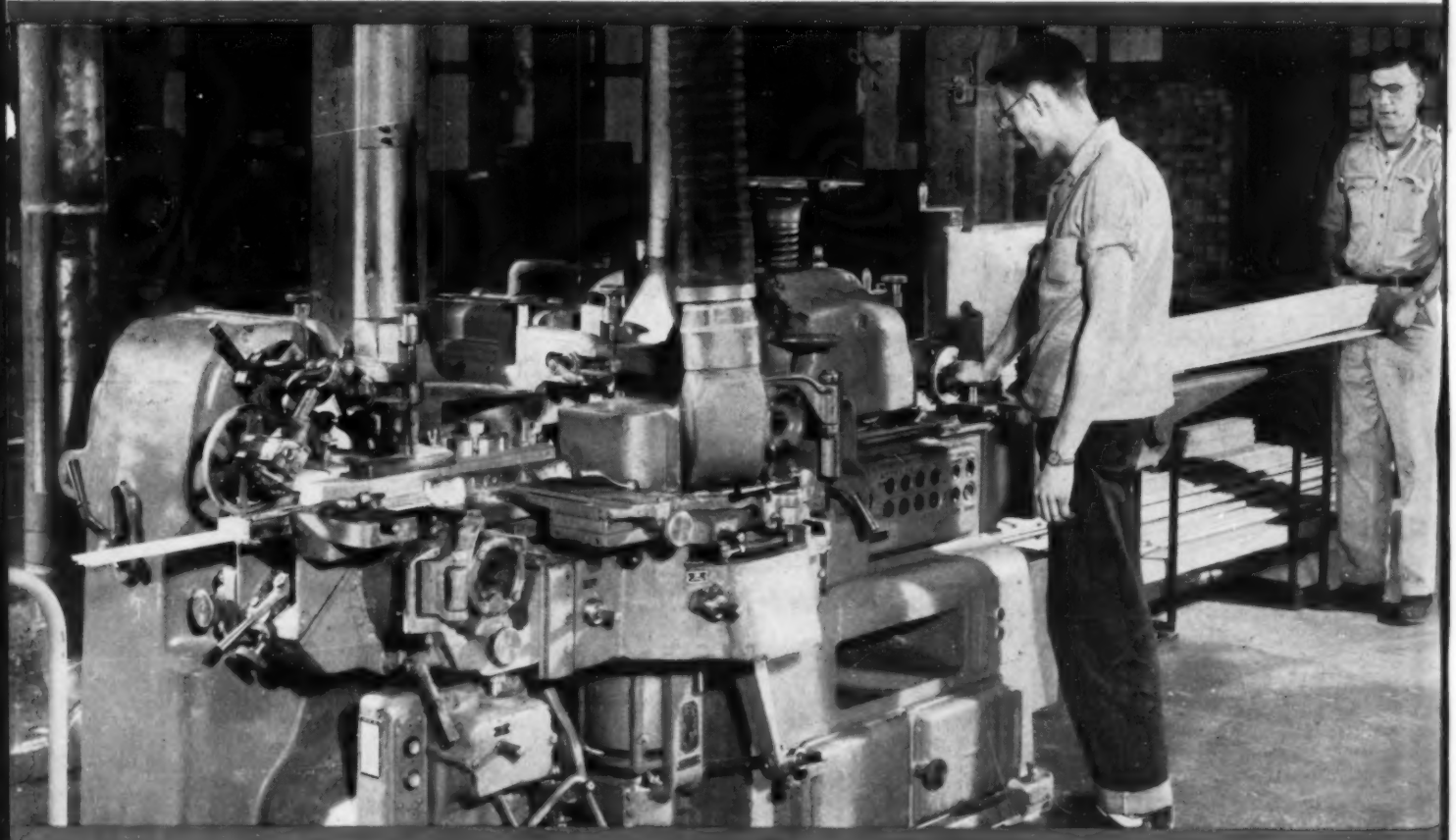
The outstanding success of Rolscreen Company, Pella, Iowa, was the subject of a major article in a national woodworking magazine recently. "We have standardized on the Mattison No. 276 Moulder because the rigid, close-coupled design helps us hold tolerances we gauge with micrometers and dial indicators," says H. S. Kuyper of Rolscreen. The company's popular "Pella" prefabricated windows and wood folding doors require precision manufacture, yet high-speed production.

"One of a number of operations for which we use these soundly designed machines is the manufacture of multiple small mouldings—formed cutters are used to make several mouldings from one piece of material in a single pass through the machine. Production is increased corresponding to the multiple number of pieces obtained per cut."

Another profit-building advantage important in the Rolscreen plant, which covers a city square and operates around the clock, is the low downtime record of their numerous Mattison machines.

"Maintenance is very low, and when we need parts, your service department makes fast stock shipments in most cases," says Mr. Kuyper.

The experience of successful companies like Rolscreen suggests a practical next step in building your own products' success story: call your Mattison dealer *today* and discuss ways to improve production methods, using standard Mattison woodworking machines!



Mattison Machine Works, Rockford, Illinois

Gentlemen: Please send bulletin on Model 276 Moulder ☐ and information on Model 231 Pedestal Grinder (shown at top of ad) ☐

Name _____

Firm _____

Address _____

City _____ Zone ____ State _____

MATTISON MACHINE WORKS ROCKFORD ILL. U.S.A.

MATTISON

WOODWORKING MACHINERY

"Built better . . . to produce better quality"